DECEMBER, 1874.

$1.50 a YEAR. - - - - - - - {OFFICE, No. 9 NORTH STREET, Near Baltimore St.

TO FARMERS AND GARDENERS.

$1,000 REWARD TO ANY ONE that can find by analysis or otherwise any adulteration whatever in my manufacture of Bone.

No heavy Bones taken out for Bone Black, or other purposes.

The First Manufacturer in America that sold GROUND BONES by WEIGHT.

PURE BONE DUST AND

BONE MEAL

from Slaughter-house Bones, twenty-five years the standard for purity and excellence.

CHEMICAL LABORATORY OF P. B. WILSON, No. 32 SECOND STREET, BALTIMORE, July 30, 1873.

Joshua Horner, Jr.—Dear Sir: The following is the result of analysis of a sample of your Bone Dust drawn by myself from a lot of seven tons lying in your warehouse:

Moisture, (deter. at 212° F.)	3.74 per cent.
Organic Matter	40.12 per cent.
Containing—Nitrogen, 4.08; Ammonia 4.95	
Inorganic Matter	56.14 per cent.
Containing Phosphoric Acid	24.52 per cent.
Containing Bone Phosphate of Lime	53.52 per cent.
Insoluble Matter	2.51 per cent.

This is the BEST SAMPLE OF BONE DUST I CAN FIND IN THE MARKET, and call your especial attention to the LARGE PERCENTAGES OF VALUABLE MATERIAL for the improvement of the soil, and to the SMALL PERCENTAGES of moisture and insoluble matter

Respectfully, etc., P. B. WILSON, *Analytical and Consulting Chemist.*

PREPARED FOR DRILLING, AND PACKED IN BAGS, 167 LBS. EACH, AT $45 PER TON. DISSOLVED OR VITRIOLIZED BONE, $48 PER TON. BONE ASH, GROUND AND DISSOLVED, $42 AND $48 PER TON. FARMERS' SUPPLIES.

JOSHUA HORNER, JR.

54 S. Gay Street, 178 Forrest Street and Corner Chew and Stirling Streets, BALTIMORE, MD.

We will purchase and have carefully shipped, by whatever mode of transportation may be designated:

FERTILIZERS of every description sold in this market—and there is, probably, no other city in the Union which offers better facilities for this purpose. We will buy, and deliver from the Peruvian Agent's Warehouses, whenever the order is sufficiently large to warrant it,

PERUVIAN GUANO.

Also the various **PHOSPHATIC GUANOS** imported into this port; **BONE DUST** from the best manufactures of this vicinity or the cheaper kinds from a distance, as may be ordered by the purchaser;

Land Plaster, Oil Vitriol, and all Chemicals Required

In the manufacture of HOME MANURES, or SUPERPHOSPHATES from the most reliable factories.

FRUIT and ORNAMENTAL TREES, SHRUBBERY, Field, Garden and Flower SEEDS.

All kinds of AGRICULTURAL IMPLEMENTS and MACHINERY at manufacturers' prices. Likewise,

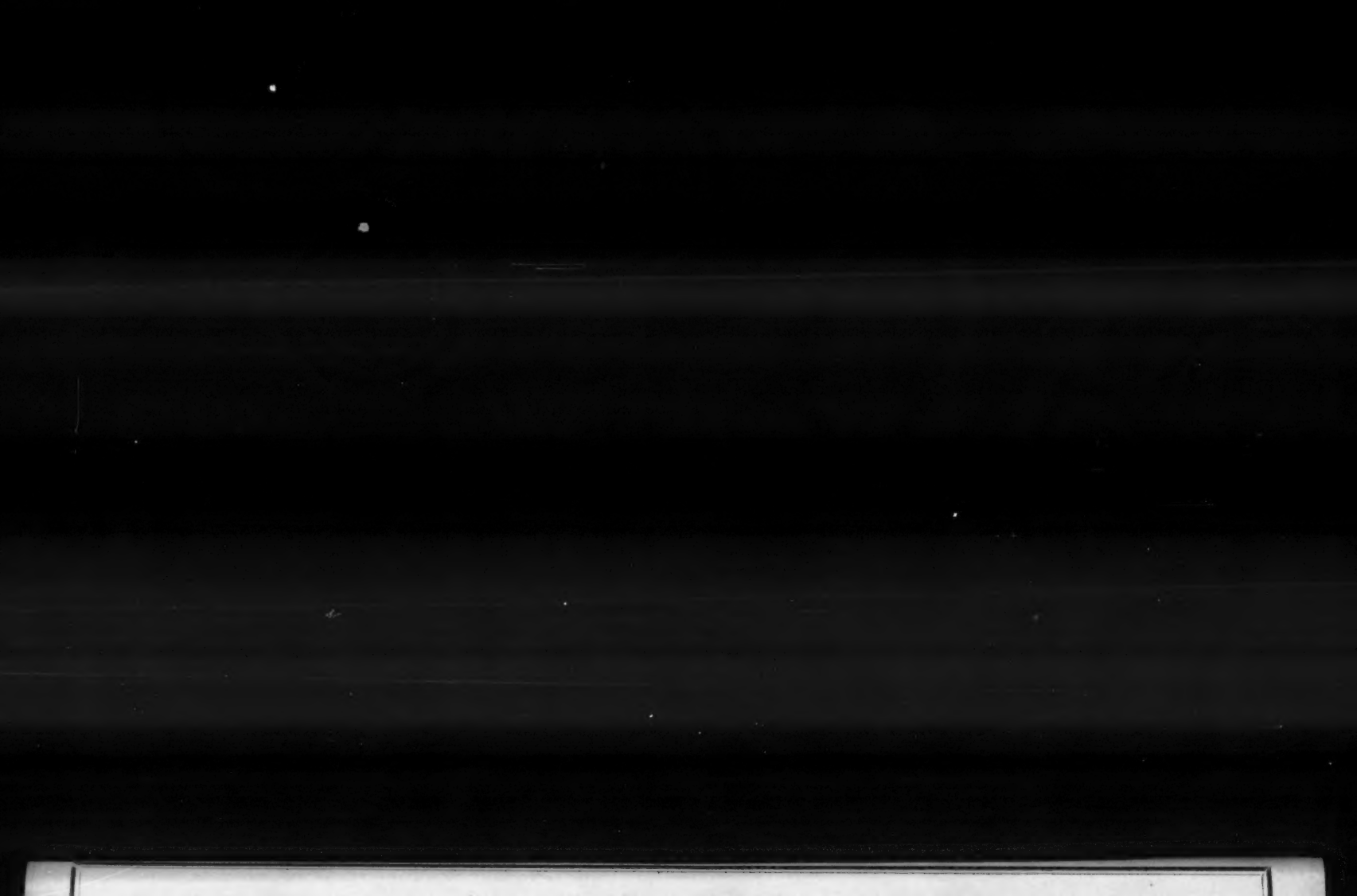
Cattle, Horses, Sheep, Pigs, Poultry, &c.

Of the improved breeds. In this vicinity, in some particular kinds of stock, a better selection can be made than elsewhere, and special attention will be given to buying and forwarding such animals as may be ordered.

TERMS CASH (or its equivalent.)

Sam'l Sands & Son,

No. 9 North St., near Baltimore St., Baltimore, Md.



THE

AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

VOL. III.—No. 12.] DECEMBER, 1874. [NEW SERIES.

Closing of the Volume!

How often have we been called upon to repeat this annunciation, since our connexion with the *Farmer!* Another, and still another year has rolled around, for more than an ordinary life-time, that the writer has repeated the oft-told tale to his readers, that his labors for another period of time were completed, and renewed his thanks to those of his long-tried friends who had sustained and cheered him in his delightful duties, in maintaining the agricultural interests of his country, and in building up and placing upon a solid foundation the *Old Pioneer* of agricultural literature in the United States. And we must acknowledge that, great as has been our pride and gratitude, in times that are past, for that cheering confidence with which we have been favored by the farmers of the country, never have we been so forcibly impressed with the debt of gratitude we owe to them, as in the past year.

At no former period of our history has such a universal deluge swept over the business of the nation; involving in its effects all classes and every profession—the capitalist, the merchant, the mechanic, and the artisan of every grade.—Amidst such an overturning, it was not to be expected that the agricultural classes were to escape some of the many consequences of the calamity, and, though late, as is generally the case, as we have ever found in those panics which in a business career of half a century we have witnessed on sundry occasions, the final result has been to involve them in the general disaster. The ordeal through which we have passed has buried with its power and intensity the hopes and prospects of many of our fellows, and on none, perhaps, has it dealt severer blows than upon the agricultural press of the country, taking into the account the number engaged therein—a number of the ablest journals, devoted to the spread of agricultural education, especially at the South, have gone under, and the rapid changes which have been going on in the management of others, indicate a severe struggle to maintain an existence;—but we hope and believe the worst is now over, and that those who have been enabled to weather the storm, will soon find that they are once more in a haven of rest, and that the clouds which have lowered over them are passing away, and sunshine and prosperity are again in the near future—that the prospect of a permanent improvement is about to dawn upon those upon whom they are to rely for their support, and that the coming year, freed from many of the embarrassments which have surrounded them in the past, will be one of unusual ease. The chastenings that we have received as a people have taught us a lesson which, if we have the wisdom to avail of, will amply repay for the sufferings and deprivations which we have been forced to encounter. The wild spirit of speculation and extravagance in which we have indulged has been rebuked, and a more general desire to live within our means, to husband our resources, to economise in every legitimate way, and abstain from plunging into debt, has been forced upon us, and we think all the indications point to the fact that we have determined to accept the situation, to make the best use of the condition in which we are placed, and—may we not add, as the decision of many—to be thankful to Him who doeth all things well, that we are still favored with so many of the blessings of life, and with so cheering a prospect in the future. Whilst these troublous times have been so terribly demoralizing in their general operations, it is in a high degree gratifying to us that the old *Farmer* has been able to withstand the blast, and, like the sturdy oak, with its roots

spread out in every direction, to maintain its position, not only unscathed by the storm, but its foliage as fresh and green as in the best days of its youth, when in 1819 the original founder, the lamented Skinner, ushered it into existence, or in 1858 when we retired from its management. During the past year, our business in every department has steadily increased, and at no time has the prospect for a still greater extension of our subscription list been more flattering than at the present. For all the favors thus enjoyed, we beg to return our sincere thanks to our numerous friends, through whose instrumentality we have been mainly enabled to continue to present a paper to the public, of which they and we have cause to be proud.

Our past conduct of the *Farmer* is the best guarantee we can give as to the future;—we feel conscious of the fact, that a long experience has made us thoroughly conversant with the wants of agriculture; and that judgment and discretion which it has been our province to enjoy, will ever in the future, as in the past, be exercised in behalf of the interests of those for whom we have so long labored. To help us in our good work, we will rely upon the continued kind offices of our numerous friends scattered abroad in every direction. Not one of those on our present list, but probably has it in his power to send a *new* name along with the renewal of his own subscription, and most of them can procure a club at the reduced rates called for in our prospectus on another page. Like the preacher, the editor can always speak with more eloquence and force to a large than to a small auditory, and as we are nerving ourselves up for a vigorous campaign, we hope if we are spared to see the close of another year, to be enabled to announce to our many warm-hearted friends that our dear old *Farmer* has more than doubled, and we hope even trebled its subscription list, and in proportion, increased its usefulness. *We know*, and believe we are not gui.ty of egotism when we so say, that we have the ability and all the facilities for ensuring to our patrons *a good paper*, worthy of being received into the family and at the fireside of every farmer's home in the country. We can with confidence appeal to those who have read our journal for the past year to confirm our assertion—we have the assurance of many, very many of our readers, of the great good we are doing through its instrumentality—and to all we can appeal with equal confidence who have known our history in the past, that in the pages of the *Farmer* nothing can ever appear but what we conscientiously believe will redound to the interests of those for whom we cater. No personal or selfish considerations have ever prevailed with us to prostitute our journal to the furtherance of any interests incompatible with those of the farmer—and if in our earlier days, when it was more a struggle for bread than it has been in later years, we were able to resist the seductions, if any, upon our integrity, so now we are less liable to be tempted from that path which we have ever marked out for ourselves in the conduct of our journal.

A word or two more ere we quit this subject: The want of the times now is, emphatically, *live men*—and although the senior of the *Farmer* is blessed with an undue measure of health, with his mental and other faculties, he trusts, not much impaired, although he has reached several years beyond the period of life of three score and ten, which the Wise Man says is allotted to man, he hopes, if it is the will of his Heavenly Father, to be spared still longer in the sphere of his usefulness, to aid in the battle which is now upon the agricultural community, to restore our fair land to that prosperity and happiness which it formerly enjoyed—for we have a delightsome inheritance, and it is only necessary for every son to put his shoulder to the wheel to make our entire land once more to blossom as the rose. We acknowledge we wish to be spared a little longer to aid in this grand object—but if this is for wise purposes denied us, we have the consolation of knowing that we will have left, as we trust he will be, our junior, who, in the prime of youth and vigor of manhood, has already taken hold of the work, with a zeal and ability which gives us the full assurance that whenever the time arrives for his entire control, it will be found that the *Farmer* has not lost any of those characteristics for which it has ever been famed—indeed, with the superior advantages of education and natural taste for the work, with other necessary attributes of success, we have no hesitation in saying that not an iota of that high reputation which our journal has ever maintained, will be compromised whilst under his direction. And here let us close these remarks, with the following pungent and truthful paragraph from our able cotemporary of the Tennessee "*Rural Sun*," every word of which we fully endorse:

"Among the many needs of the South, chief of all, towering above all, overshadowing all, is the need for *live men*, men of energy, men of action, men of brains; above all, men of high integrity. In all times there is need for such men. There is always work for them to do, but in times such as the present, when people come to the pass that the Southern people have reached, there is an imperative need for great leaders.—

Not party leaders, not leaders of armies, but leaders of industry, men of foresight and capacity, who have the wisdom to see the right road to prosperity, and the will to win their way to it. Give such leaders, and the future of the South is assured. Material prosperity will soon return, and with it political freedom. For it is a truth attested by all history that political freedom is inseparable from national prosperity. Give the one, the other is sure to follow. There is no lack of latent wealth in the South. Indeed, one main source of her present troubles is the ease with which wealth was accumulated in times past.—It only wants live men to develop it,—to gather it together. We want men of enterprise, who have courage to undertake great works, and the capacity to carry out the undertakings; the whole country needs them. They are wanted on every farm. Will the want be met? Where is the need to be supplied? Are the men growing up? These are vital questions for the entire South."

An able correspondent, whose name we should be glad to have affixed to his communication to give it greater strength, but in whose initials will be recognized those of a gentleman of well-known literary taste and talent, whose contributions are among the best esteemed in the literary magazines of the South, and who is now employed in a work of vast interest to every Southern man, has singled out, in the following communication, the *American Farmer*, as one of the instrumentalities which is to secure a permanent prosperity to the people. We earnestly hope his suggestions will be heeded, and that our journal, through the proposed means, will reach every homestead. S. S.

The American Farmer.

To commend to the active sympathies of Southern agriculturists the "*American Farmer*" in the columns of that monthly would, if there were no exceptions to rules, be an act of questionable propriety; but there are exceptions to rules, and we are told also that rules are proved by exceptions; logically, therefore, it may be asserted that "exceptions" are as much "the rule" as the rule itself. I conceive that the case in point—the making the "*American Farmer*" proclaim its own merits and urge its own claims—is one that best establishes the rule by violating it.

The value of the "*American Farmer*" is best known to those whom its monthly visits instruct, encourage and inspire with hope—hope that blundering ignorance and blind prejudice will, ere long, cease justly to stigmatize Southern agriculturists.

The solidity of its articles and the plain but polished language in which they are clothed, make the "*American Farmer*" an educator of "the people,"—the power of which for good no one who reads this communication will question.

We have, Messrs. Editors, theorists, experimentalists and politicians, not *quantum suff.* only, but in most deplorable profusion, and it would be invidious, perhaps, to ask how many of this army of Southern regenerators are seeking "their own." But where do we find systematic effort to compass the practicable, steady, persistent effort to accomplish with tools fitted to our hands and of tested merit, that work of building up and adorning that which lies at our very doors?

It is a proposition that cannot too often be insisted upon that the *vis inertiæ* of ignorance can be overcome only by the vitality of knowledge infused into it. Cultivated intelligence implies, where moral has marched *pari passu* with intellectual culture, the consciousness of a power for good, the active manifestation of which society has a right to demand.

The writer is not presuming, with officious dogmatism, to instruct in their duty the educated agriculturists of the South. His remarks are only suggestive, and if there is logical weakness in his positions they will, as they should, fail in the object for which they are here stated.

The "*American Farmer*" is one of those instrumentalities at our command which intelligent effort can employ with assured confidence of success. Glancing for a moment at the political condition of the South, we cannot fail to perceive that on the elevation of the agriculturists, as a class, greatly depends the permanence of sound conservatism, not that conservatism which tenaciously grasps the effete, but that which so construes the law of progress as to read in it the *festina lente* caution of the wise of all past ages.

Many years ago it was remarked to the writer—the speaker being a gentleman of close observation and knowledge of human nature:

If you are in search of a good physician you will find one—as a general rule—in the man who can "diagnose" other maladies besides those of physical humanity.

To apply this remark:—Let us endeavor to impart sound views on agricultural matters, and we shall go more than a little way towards the spread of sound views on things generally.

The habit of careful consideration and reflection on one subject naturally induces sound thinking on all others.

This last proposition is, of course, subject to modification, by educational bias and prejudice.

I respectfully submit that there is matter for reflection here, but I am exceeding fair limits for such a communication as this.

The editors of the *Farmer* have, I know, the hearty "well done" of their readers and correspondents, and it has not appeared to the writer a violation of any known conventional rule, that our earnest appeal to the admirers and supporters of their journal should find place where only it can directly reach those to whom it is addressed.

Let us, then, one and all, give a practical endorsement to that which we all heartily desire, that for every *one* subscriber to the *Farmer* now, there shall be written *two* at least for the coming year. H. E.

Greenville Co., S. C., Nov. 1, 1874.

Agricultural Improvement in Georgia.

Thos. P. Janes, the Commissioner of Agriculture for Georgia, in a recent Report, gives a very gratifying view of the progress made in the Agriculture of that State—more especially in the fact that the farmers have been induced to diversify the productions of the soil. Whilst the area in cotton is shown to have been decreased 13 34-100 per cent., the increase in corn is 13¼ per cent., and in wheat over 19 per cent.; and it is earnestly hoped that the coming year will show a still greater preponderance in the same direction. The increase in the number of head of farm stock is also shown to be extremely gratifying, and the Commissioner hopes that with the increasing productions of grain and forage, and sheep, hogs and cattle, more attention will be given to the rearing of horses and mules.

The Commissioner attibutes much of this great change for the better in the condition of the farming interests of the State, to the teachings and efforts of the Patrons of Husbandry. A resolution was offered by Col. T. I. Smith, Master of the State Grange, at the meeting held at Atlanta in January last, and unanimously adopted, urging farmers to plant only one-third of their cultivated crops in cotton, and the remainder equally in corn and the smaller grains—which resolution was, by order of the body, sent to each subordinate Grange in the State, with the request that the policy be urged upon each individual member, which was faithfully done, and the good effects are very apparent. Let the policy be still further urged, and the good work will be continued. The Commissioner remarks, very justly, that "if the Order of Patrons of Husbandry never accomplished anything more than to impress upon our farmers the very important lessons of raising their own farm supplies, and of paying as they go, their labors will not be in vain."—Much of the good thus accomplished is also attributed to the influence and patriotic labors of the State Agricultural Society, and its subordinate societies.

This useful and time-honored organization, (adds the Commissioner) "is greatly distinguished by being under the management of a large number of the very best and wisest men in Georgia, who have worked in harmony, having no selfish motive to serve; but have, in every possible way, labored to induce our farmers to adopt the policy of making their own supplies, of keeping out of debt, and of working vigorously with our own hands to regain our former condition of plenty and prosperity. The panacea for all the evils of debt, heavy taxation, high rates of interest, scarcity of money, and hard times and discontent, is an ample production, on our own farms, of all needed home supplies. This will pay our debts, put the rate of interest as low as we want it, stop the oppressiveness of taxation, furnish us with every luxury, and fill the country with happiness."

Here is something tangible of the effective working of the co-operative system so urgently recommended as the great lever by which a reform in our ruinous system of husbandry is to be effected, and, as remarked by the Commissioner of Agriculture, if the "Patrons" never accomplish any more than the impressing upon the farmers lessons taught and accepted in the changes noted above, their labors will not have been in vain. We must quote further from the remarks of Mr. Janes:

"What policy can possibly be more ruinous, what spectacle more decidedly to be condemned, than that of an *agricultural people*, living in the most productive country, and blessed with the most genial climate on the globe, *purchasing their supplies!—a farmer buying that which his own farm will abundantly produce!* The evidence here exhibited, that this suicidal policy is changing, is a most gratifying fact. A farming people who purchase their supplies of farm produce, will certainly grow poorer as long as they continue to do so. What would the world say of a cotton manufacturer who purchased the yarns and cloth necessary to supply the market, which his own factory should turn out?"

"Last year the acreage of corn, according to the returns, was 1,927,646 acres, producing 10,023,013 bushels. If the yield this year, per acre, is equal to last year, the crop will amount to 11,358,447 bushels, being an increase of 1,335,-634 bushels.

"What amount of corn was imported for this year's supply, I have been unable to ascertain satisfactorily. It is believed, however, that it exceeds the increase of corn made this year over last year, and that a considerable (though largely reduced) quantity, will have to be brought from abroad, to supplement our present crop. It is earnestly hoped that a still larger area, and a further increased production next year, will fully meet the home demand.

"Unless we have a *self-sustaining industry*, we shall forever remain poor.

"Whenever we make, at home, every needful article of farm produce, the present ruinous rates of interest will cease; money will no longer be in such great demand, and our people will soon be out of debt. Then plenty and contentment will reign.

"Let us no longer be slaves to our own folly, or forge the chains which manacle our limbs.

"The policy of keeping out of debt—of buying nothing except what can be paid for at once—is gradually gaining strength, and this, in a great measure, justice requires to be said, is due to the influence of the granges."

Renew your subscription PROMPTLY, and in doing so try to send at least one new name, or more if practicable, with your own. If times are hard, then, especially, remember you CANNOT AFFORD to do without the "Farmer."

Labor Saving in the Culture of Tobacco.

Mr. J. M. Baker, of Louisa county, Va., contributes to the *Southern Planter* the following paper, with the above title, which will be read with interest:

As cause must ever precede effect, so every continued and permanent success in business pursuits, farming included, must be preceded by a sound theory. Every successful man has in his mind maturely considered and well arranged plans, though he may never have reduced them to writing. It is true, that in reference to many things there are more visionary theorists than practical, successful men, because generally it is easier to plan than to execute. The wise man, discarding the pride of opinion, is willing to learn things he does not know, even from his inferiors; and, if he be not selfish, will communicate his knowledge to others. In some respects we all know better than we do, not for want of will, purpose, and desire, but because of casualties and adverse circumstances that interpose and prevent the full consummation of our best arranged plans. This, however, should not diminish but increase our desire for more knowledge, that we may be the better prepared to overcome all difficulties in our way.

With this, as I think, not inappropriate preface, I now present my theory and practice for labor saving in the culture of tobacco, together with some remarks concerning the advantages of saving and applying the manure to the land. To demonstrate the advantages of the plan which I, together with some others, have adopted, it must be contrasted with the antecedent customs, when all tobacco land was hilled before being planted. This method, I suppose, had its origin with the first growers of tobacco in this country, when the land was being cleared, and the stumps, roots, &c., prevented thorough preparation by the plow. For such land, and only for such, it is still, doubtless, the most effective method of preparation. There are some advantages in having tobacco plants slightly elevated to prevent their being covered and killed, when small, by hasty and excessive rains. But these can be secured more cheaply and more easily, by bedding with the plow, than by hilling with the hoe. It is of the first importance to plow, harrow, and thoroughly refine the land, otherwise the clods will be turned by the plow, when bedding, into the bed, and cannot be removed, even by the hilling process, without extra work which the present laborers will not faithfully perform, and by the neglect of which I have seen the growth of tobacco, on rich land, retarded, and light and inferior crops made, which yielded no profit.

Our springs of late years being backward, and our summers dry and shorter, the planter should do, if possible, everything necessary to accelerate the growth and hasten the early maturity of his crop, by which an advantage is secured in both quantity and quality. I have been a grower of tobacco for 30 years. Before the war, not being owner, I was of necessity the hirer of all the labor I employed. This necessity induced a vigilant eye to expenditures, and the abating of all unnecessary labor. The heaviest item remitted in the cultivation of tobacco was hilling the land. Dispensing with this I found to be equivalent to the saving of 8 days for 5 hands, at hilling time, and 6 days labor for 5 hands to cut off the hills, at planting time, for a crop of 100,000 plants. The average yield of my land during the period of the hilling process, was 5 to 6 plants to the pound; under my present system, 3½ plants to the pound. I do not attribute this gain alone to the planting in beds instead of hills, but in part to this, and more to better manured, fertilized and prepared soil.

Before plowing my land for tobacco the first time, I apply broadcast all the manure I can raise. In order to do this in time, I sometimes begin in the fall, and continue to haul out and plow in, so that the manure may have time to decompose and become incorporated with the soil. Much of the best properties of the manure is lost by fermentation and by leaching, which would be saved and utilized in the manner above stated. I endeavor in this way to manure and plow all my land for tobacco by the 1st of April.

During the month of April I harrow and well refine the surface; then re-plow, harrow, and thoroughly refine—breaking and pulverizing the clods. From the 1st to the 20th of May I bed the land. This is done by running off the rows with a single shovel plow, the distance desired, say three feet apart. The guano is then applied in the furrow. Then follows the double plow, running twice to each row, and bedding upon the guano. When ready to plant, these beds are struck off two at a time, by a scraper attached to shafts, and drawn by a mule or horse walking between the beds. The planting is done, without further preparation, by the hoe or otherwise, by setting the plants in the centre of the bed, in a straight line with each other the distance desired, say 30 to 36 inches. The land is thus left in a fine condition to facilitate the cultivation of the crop. Instead of being in hills, as under the old system, requiring nearly the whole surface to be cut by the hoe, there is but little hoe work needed. As soon as the grass comes through the surface, the *three-tooth cultivator* should be put to work, running twice to each row, and with care, by which the grass will be effectually killed, and only a narrow strip in the centre of the bed to be cut by the hoe. This is now a critical period in the growth of tobacco, and it is very important that this work with the cultivator be done as soon as the grass appears, making true the saying, "A stitch in time saves nine."

The cultivator should be followed by the hoes, to cut the strip of soil left in the centre of the bed, *and break the crust around each plant, and put a little fine soil around each.* This done, the tobacco will need no more work until it attains the size of a summer hat, or has pretty well covered the top of the bed, when it should be plowed with the *single shovel plow*, by running a furrow on each side as close to the plant as possible, to avoid loosening it. The hoes should follow, putting to each plant a moderate-sized hill. The season being favorable the growth will be rapid, and about the time the plants generally are large enough to top, it should be again plowed, and this time with a single-horse mould-board plow, running twice to each row and turning the soil to the tobacco. This should be followed in three weeks, or when grass appears, by a light scraping

with the hoes, when the cultivation of the season is done. I think I have shown that the cost of cultivation under this system is greatly reduced, and also is made more effectual. A few general remarks and I am done.

First. It does not pay under our present market to grow small tobacco, except for *bright wrappers*. Large tobacco cannot be grown on poor land, if 500 pounds of guano *alone* were applied to each acre. Use guano in connection with stable, farm-pen, and all kinds of manure that can be raised on the farm. Make the land rich, plant early, and work well, and you will be recompensed for the labor expended. Those who reason from the low price of tobacco when slavery existed, to prove that it must and will sell as low under present circumstances, reason, I think, from wrong premises, and consequently to erroneous conclusions. These profits were estimated more with reference to the increasing value of negroes, than from the surplus production of crops.

Now all labor has to be paid for, or done by the land-owner, consequently, as soon as the net proceeds of any article of produce falls below a price that will pay a profit on the cost of its production, necessity controls, and, as a consequence, the price advances. I therefore conclude that the price of tobacco must rule higher in the future.

November Meeting of the Maryland State Agricultural Society.

The regular monthly meeting was held, on the evening of the 4th ultimo, at the rooms of the society,—A. Bowie Davis, Esq., President, in the chair. The President made some remarks concerning the late fair and the improvements needed at Pimlico to insure anything like successful exhibitions. He said:

Most of the premiums and expenses have been paid, and when the assets of the association shall have been fully realized, it is believed that every just claim against the society will be fully met, and a sufficient balance left to carry on the regular monthly meetings into the ensuing year.

The experience of the past year has developed some defects in the present organization, and pointed out some improvements which might be made. Mr. Davis referred to the period of the year at which, in consequence of an existing agreement with the Maryland Jockey Club, they were compelled to hold the fair. By that agreement, made some years ago, the Jockey Club claim possession of the grounds for a month on and after the 10th of October. This compels the association to hold its exhibition before that period, at a season of the year imperatively demanding the immediate attention of the farmers at home.

The present arrangement practically excludes the great body engaged in that important interest from attending and participating in the benefits and enjoyments of the fair. It requires no argument to prove, that an organization avowedly to promote the interests of the farmer ought not to be so hampered as to deny to him the advantages and enjoyments incident thereto. He trusted, therefore, before another fair is held the Jockey Club will see the reasonableness of the desire of the association to modify this agreement so as to give to it a more appropriate and convenient season hereafter to hold its annual exhibition.

The premiums, Mr. Davis said, are not sufficient to induce persons living at a distance to incur the loss of time and expense to bring their stock, implements, and productions, to the show. Many farmers prefer the smaller premiums of the county fairs nearer home, and where they incur less expense and loss of time in attending them. Larger premiums by the State Fair is the only remedy for this state of things. The accommodations for stock, particularly the sheds for cattle, are not such as to afford sufficient shelter and protection from bad weather to which our autumnal climate is frequently subject. The late season was so mild and beautiful that no inconvenience was felt. It would be unsafe to calculate upon such propitious weather in all future years. He therefore strongly recommended a remodeling or enlargement of the cattle sheds. The horse stables are not as ornamental and attractive as they might be made at a very moderate outlay of money. Nor are the pens for swine sufficiently protected.

The hall of industry, in the basement of the grand stand, is deficient in light, and presents a dull and cheerless aspect. This interesting and important feature of the exhibition demands better accommodations and a more attractive building and location. The restaurant accommodations are nothing but rude and uninviting sheds, unworthy of a property owned by the State of Maryland, the city of Baltimore, and many of its most wealthy and influential citizens. Nor are the accommodations for the officers of the association much better. These buildings ought to be replaced with others more comfortable, attractive and inviting.

A great want of the association is a motive power, to test and put in operation the large amount of machinery annually brought to the fair for exhibition. Without this practical test the judges have to depend upon the representations of exhibitors, always plausible from self-interest, and calculated to mislead the judgment of the committees. With such a test committees would have an opportunity to form their own judgment and render awards which would challenge confidence and respect. A smaller track within the main circle for the grand cavalcade (the most attractive feature of the late fair) would, upon such occasions, enable exhibitors to present their stock, implements and machinery to much better advantage than by the present arrangement, and within this track should be a temple of agriculture, with grounds suitably laid out and ornamented, where the productions of the field, orchard, garden and dairy could be exhibited and preserved.

Why is it not such as it ought to be? He had already pointed out why the farmers cannot take a more active or lively interest in the fair. A second reason is that the citizens of Baltimore do not patronize and sustain it. The main dependence of all such associations for revenue, and to enable them to offer and pay premiums, is the small admission fee at the gate. This, for the causes stated, being insufficient to enable the association to make all of these several improvements, a considerably increased revenue will have to be obtained. The president further stated

that the property at Pimlico, or the reversion of it, is owned by the State, the city and private individuals; each of these, by act of Legislature, is entitled to a pro rata interest in the grounds.

Wm. P. Willey spoke of the attractiveness and success of the St. Louis and other Western fairs.

D. Lawrence attributed the small attendance at the State fair to the unfavorable location of Pimlico. He thought that if improvements were to be made, they had better be made elsewhere.

Sebastian Brown also argued that the ground was too far away from the city.

C. Irving Ditty thought the grounds would either have to be changed or the facilities for getting to Pimlico improved.

Mr. Davis inquired what it would cost to build a branch road from the Western Maryland road to the fair grounds, and it was stated that the cost would be about $10,000.

John G. Clark, connected with the Pikesville horse railroad, said that by the addition of another track the facilities of the road would be greatly augmented, especially if the city lines would furnish cars, and he believed they would.

Mr. Brown thought if a double track was constructed and cars furnished by the city lines, sufficient transportation could be furnished to visitors.

A committee was appointed to see if anything can be done for improving the present facilities of approach to the grounds.

The president stated that it would require about $500 additional subscription to the association to enable it to obtain the $2,000 appropriation from the State as provided for by law.

The Virginia State Fair.

This seems to have been a great success. Every department is represented by the Richmond papers to have been well filled. The city was thronged with strangers, the weather was fine, and the result of the show exceeded the sanguine expectations of the managers. The *Whig* says "the third day the people could be measured by acres. Early in the day the movement towards the grounds set in, and it was kept up until late in the afternoon. The cars and flats provided by the Richmond, Fredericksburg & Potomac Railroad Company were running every half hour, and they were loaded down with human freight. But, in addition to this, vehicles of every kind were all running between the city and the grounds, and all seemed to be full. All the hacks, buggies, omnibuses, Jersey wagons and ordinary wagons in and about the city, seemed to be called into requisition. The streets and thoroughfares were alive with people and vehicles during the entire day. The crowd at the Fair grounds was immense. We are inclined to the opinion that it exceeded the crowd of the corresponding day last year, when the number was estimated at from twenty-five to thirty thousand people.—What we liked about it was the very large proportion of country people, among whom were the very pick of the State. There were many visitors from other States, while the attendance from our Virginia cities, notably Petersburg, was very imposing. The gallant Cockade City never does anything by halves. We heard of a train from Petersburg that brought about twelve hundred visitors."

The same paper gives the following, which would seem to explain the causes of the great success of this society:

"During fair week our city is transformed into a sort of exchange, in which people meet to consult on all manner of subjects, and to arrange and determine many private and public matters. The occasion has come to be something more than an agricultural fair. It is a sort of a general business occasion as well as a festival. It has aspects and characteristics that make it very interesting. It is a grand reunion of friends and acquaintances, of country and town people, of those who are in quest of pleasure and those who have business objects to promote.

"Our people are poor, but they can always manage to lay aside enough to bring them to the fair. They look to it from year to year, and feel that it is not only a pleasure but a duty to sustain the State Society. It is one of the few old Virginia institutions that has survived the war, and, as such, is cherished by the people. Never, we believe, was that society conducted under better auspices than at present. There is no clap-trap or humbuggery in its management. With an eye kept steadily upon substantials, the present administration (happily continued for another year) never loses sight of those more ornamental features which attract and interest the multitude. It combines business with pleasure, and unites all the elements necessary to give success and eclat to its exhibitions."

The premiums were awarded as follows:

In *Cattle* the sweepstakes went to the Short Horn herd of Mr. J. T. Cowan. In *Short Horns* Col. G. D. Palmer took first prize on aged bull and bull between 2 and 3 years; S. Frank, first on bull between 1 and 2 years. J. T. Cowan took first on aged cow, second on cow between 2 and 3 years; and Mr. A. M. Bowman first on cow between 2 and 3 years and second on aged cow. Prize for best heifer between 1 and 2 years, and best heifer calf, went to T. L. McKean, of Penna. In *Ayrshires*, Mr. T. S. Cooper, of Penna., took all the premiums, save second on bulls, to Dr. Crenshaw. In *Alderneys* the prizes seemed well distributed among J. G. Pratt, C. B. Moore and A. P. Rowe, and those for *Devons* between F. W. Chiles and Gen. W. H. F. Lee.

In *Sheep*, Major S. S. Bradford took most on Merinoes, and Dr. J. R. Woods on Middle-wools.

The display of *Horses* was very fine, and is said to have been one of the best ever held in the State. The Arabian horse, of Col. Jenifer of Md., was on exhibition, and was greatly admired.

The display of *Machinery* and *Implements* was mainly by local houses, but we notice that Baltimore was represented by Messrs. Joshua Thomas and J. C. Durborow—the former of whom was awarded a medal for his "Eclipse" portable engine, and the latter given special notice for the "Ball Steel Plow."

In the class of *Agricultural productions*, Mr. A. M. Bowman, of Augusta Co., received the prizes for the best acre of Irish potatoes—of not less than 300 bushels; the best acreage of turnips—not less than 600 bushels; and for the largest product, per acre, of corn and oats.

Agricultural Calendar.

Work for the Month—December.

The weather here, up to the time we write, (Nov. 20,) has been so unusually moderate that, but for the drought, much work that usually runs into the winter would have been done. Whether the mild autumn will be followed by an open winter, or the reverse, is beyond our ken; but the weather prophets are equally certain on either side. This month usually finds the farmer with enough to do in clearing up the unfinished work of the year, and in arranging and preparing for that of the one to come.

In our variable and trying climate, no duty of a farmer is more pressing at this season than the

Care of Live Stock.—*Horses*, as far as possible, ought to be worked moderately and regularly. It is equally essential to provide good stabling, well ventilated but not full of drafts, sufficient bedding and nourishing food. Scarcely less important is the carrying and brushing. To keep the skin in good order is not any less a hygienic requirement in farm stock than in man. Regularity in cleaning, feeding and watering is also desirable with these useful servants of man, and in this, as in many other things, it should be remembered there is no eye like the master's. In short days and cold weather the provocation to neglect is too often too powerful to be resisted by hirelings. *Milch Cows* should be fed liberally, and not upon a plan which overlooks the very purpose for which they are kept,which is to convert the maximum quantity of provender into milk, cream and butter. Succulent food begins to be of value now that the grass fails, and we hope few of the readers of the *American Farmer* have failed to secure a reasonable provision of turnips, sugar-beets and other roots. It is good management to begin to feed well, and, if there is any choice in your stores, to give out first that forage which is most palatable, since there will not at once be that keen relish for dry food which will ensue later in the season. Do not neglect an occasional carding and brushing, and see that bedding is provided, and that the cows are kept clean. *Young Cattle and Colts* need a generous diet, and the policy of half starving is inhuman and absurd. That they merely live through the winter is not enough, and unless they now receive food of quantity and quality sufficient to carry on the process of growth, they will be so stunted as to never recover from the effects of so short-sighted a course. *Cows and Heifers in Calf and Brood Mares* need extra rations of good nourishing food; and shelter from storms, at least in the shape of sheds, if not of enclosed stables, ought always to be provided. *Sheep*, whenever the weather will allow, ought to be turned into the fields, but when wet or snowing they should have access to shelter. A little bran and grain ought now to be given, and ruta-bagas are always in order, whilst salt and water should never be neglected. *Fattening Hogs* should be pushed ahead as rapidly as possible, since the earlier they are fit for the knife the more the profit in their feeding. It is a point of some importance to feed regularly; do not let them become anxious or impatient for their food. Give a dry sleeping place, with clean bedding, and see that water is also supplied. An occasional dose of ashes and salt is good, and so is charcoal and rotten wood. *Poultry* ought to be given quarters which are light and dry, clean and warm. A varied diet is necessary if you want eggs in winter. Meat scraps, sour milk, an occasional mess of scalded bran, pulverized oyster shells or lime all help in this direction.

Manures and Composts.—Another ever-seasonable work is the preparation of these. Many occasions offer during the winter when a great accumulation of materials suitable for making rich composts could be made. Now, when the horses are often unemployed, is a good time for this business. As suitable to the season we give a well-digested plan for accumulating and preparing manure, which, we believe, was read by its author, W. W. Robinson, at the recent annual meeting of the North Carolina Agricultural Society.

"After experimenting for several years I find the following to be the best method of managing manure:

About the first of August, all the manure having been removed, the stables and yard are covered at least one foot deep with vegetable matter, leaves from the woods, weeds from the ditch banks, refuse straw, &c. A liberal supply of muck, rich earth from hollows, ditch banks or other available sources, is secured and placed under shelter, the stables are covered about one inch in depth with the muck, and covered with litter, continuing the same application every week, the stock to be driven several times over the yard every morning before turning them to pastures; after the pastures have given out the stock should be kept in the yard during the day. About the first of December, rail pens should be built in the yard with flues running through the centre, near the ground, so as to have a current of air running through the pens. The manure put in the pens in alternate layers, one-third from the stables and two-thirds from the yard.

The pens should be about six feet high and covered with earth to the depth of five or six inches.

Fermentation soon commences, and, if too rapid, may be regulated by applying water; a slight degree of fermentation is all that is necessary. It should be hauled out in three or four weeks.

In applying the manure to cotton, I lay off every fifth row with a two-horse plow, followed by a sub-soil as deep as possible; the manure is deposited in these furrows in heaps of five bushels, at intervals of nine steps, and covered with plaster; the remaining rows are prepared in the same manner as the first—the manure placed in the furrows and immediately covered.

As soon as possible after penning the manure, the stables and yard are covered with litter and managed as before till about the first of March,

when the manure is penned as before, and fermentation allowed to proceed to a greater degree than before, hauled out and applied as before.—The stables and yard are again covered as before, more liberally if possible, the manure prepared in the same way in July and applied to turnips and barley; the cotton seed is used to manure the corn, peas and clover relied upon for wheat and oats."

Ploughing.—This may be finished, if opportunities offering are seized upon.

Ditches and Drains.—Ditching can generally be done during this month. Examine all ditches occasionally to see that they are unobstructed, and see that surface-drains are kept clear.

Stabling and Sheds.—Make at once what repairs may be needed, and supply any deficiencies that exist in this regard. Do not allow stock of any kind to be exposed to the severity of the season. It is cruel and impolitic; and the expense of shelters is very small, since temporary sheds can be readily contrived at a trifling cost of time and labor.

Fencing and Gates.—Examine these and make needful repairs.

Correspondence.

The True Theory of Farming.—No. 2.

To the Editors American Farmer:

It is easier to kick over a boy's cob-house than to build a better one. The negative work of a critic, who condemns the views of others, without opinions of his own, is the easy role of the warbling songster, who mocks, without a song of his own. It is also easier to believe and propagate false theories, polished by obsequious learning of ages—to think and write in a traditionary line—than, carefully, to observe facts, and by grouping these, through right reason, to found a theory, correct error, and establish truth.

Careless modes of expression beget careless thought; erroneous conclusions follow, and false theories arise. Of all the sciences, that of agriculture has suffered most from these causes.

I cannot hope to discover the true science, in all its bearings, although there ought to be an established theory indicated by, and in harmony with, every phenomenon of plant life. These, embodied, form the true science of agriculture.

Whilst I cannot hope for the attainment of this from the present chaotic state of learning on the subject, I may resolve that *my errors* shall not have been traditional; for I deem it far more excusable to search for truth, and miss it, than servilely to follow, apologize for, or propagate the errors of others.

An error that lives a thousand years is still an error, whether printed in the books or enshrined in legends. These circumstances neither support nor extenuate it. If they did, universal error would reign supreme.

I have seen a work on agricultural chemistry that has done, perhaps, more to mould the opinions of professors in agricultural colleges, of the present age, than any other work. It abounds in learning and much useful information. Yet, I believe, I may take any opinion, theory or notion that has prevailed on the subject, from time "whereof the memory of man runneth not to the contrary," and support it by the authority of this compendium of learning.

If, for example, I would maintain that lime is the "*basis of husbandry*"—*more useful and lasting than any other manure*—I can prove it by this book. If I say that, instead of the best manure, producing beneficial results of longer duration than any other, it is the worst, and will impoverish, and has, from time immemorial, "*exhausted the soil and impoverished the descendants*" *of those who used it*—I can prove it all, by the very words and authority of this book.

And so, I can prove all about magnesia; that it is essential to plants—that wheat and corn grains require from four to eight-fold more of it than of lime, and cannot mature without it; and also, that it is poisonous to the soil, and if the plants can get as much as they will take of it, it will kill them.

Indeed there is no misconception; no shade of opinion; no confusion of ideas; no contradictory speculation among theorists or practical farmers, that the author has not espoused, or, with great respect and labored learning, made appear consistent with all the rest, and, apparently, with truth. What the truth is, we are left to conjecture from the vast learning expended in reconciling error. The work seems an abortive labor of love—not so much to establish true principles and found a science, as to explain how every shade of opinion may be made subservient to some vague latitudinous notion, whose broad ægis reconciles universal error.

A student, prior to the formation of any opinion, at the threshold of science, lighting on this book, may wade through it, and learn much that has been said and done in agricultural affairs; but will hardly form a definite opinion of any.—If he have preconceived opinions, he will meet no violence to any, but have ample opportunity to compare them with contrary notions—all supported by plausible arguments, profound learning and legendary proverbs. He is apt to settle down, in self-gratulation, that his views are as well bolstered as others, and however incongruous, at first glance, or opposed to the opinions of others, they are reasonable enough, and *might* all be true. The result is to set him more at sea than ever.

I have referred specially to this work because of its influence and numerous followers. It is also a fair type of nearly all the recent essays on the subject, the style of which is simply detestable. The earlier works of Linnæus, Lindley and others, and more recently, Liebig, are not liable to the same objections. But their gigantic efforts to found a science, could not avoid mistakes, any more than a general, commanding a vast army. Their opinions, however, were bold, decided and precise in statement. Their mistakes were not persistent errors, with fortifications and chameleon colors to guard against attack. They were fearless pioneers who muffled not the sound of the axe. Admiration for their honest courage, and gratitude for their labor, excuse their mistakes.

Of the same type with these, but far more valuable and correct, is the almost faultless work of

our own Prof. S. W. Johnson, entitled "How Crops Grow," and "How Crops Feed." Abounding in profound *positive* learning, set in words of fearless precision and certainty, every page of this work teaches some unequivocal principle in plant growth.

Whilst none of the writers and speakers have yet, so far as I know, positively advised the production of small crops, on the supposition, it seems, that plant food of the soil *is wasted by conversion into plants*, loud-mouthed deprecation of the largest crops fills the rostrum and the books.

If they are positive and precise in the statement of any thing, it is that large crops exhaust the soil, and that small crops will delay final exhaustion; both of which are false and discover misconception deplorable.

Their learning, well guarded by diplomacy of phrase, is exhausted in teaching us *how* to produce larger crops, and *how* such crops will sooner exhaust the soil.

We are told that active fertilizers result in large crops and rapid exhaustion. To believe it all, is, of course, to abandon the use of such fertilizers and the production of large crops. For right reason condemns any system that tends more to exhaustion than another.

So far, however, from believing any part of it, I think successful farming consists in—

1. *The greatest production of plants.*
2. *In the shortest time.*
3. *With the least expense.*
4. *The least waste of plant food*, and
5. *The greatest improvement of the soil.*

Failure, in any of these essentials, is fatal to the highest success. To fail, in all, is total disaster. Success in all is the acme of agricultural science and practice.

The production of small crops for a series of years is *failure in all*, and results in impoverishment of the producer and exhaustion of the soil.

Self-evident as the five branches of the above proposition appear, every one except the fifth is, directly or argumentatively, assailed by nearly all agricultural writers and speakers.

And the orthodox theory of exhaustion, if practiced as preached, undermines and defeats the accomplishment of the fifth—and so wipes out all.

The imbecility of the orthodox learning on exhaustion is enough to stagger the faith of earnest investigators in the sincerity of the authors.

This subject, at this day, is the most important division of agricultural learning, and, unfortunately, is shrouded in greater obscurity than any other.

In reference to it, as embodied in the fourth and fifth essential requisites, already enumerated, I advance to proposition 6.—That, *under no circumstances of cultivation, can fertility be perpetuated by small crops.*

One may produce small crops, and improve his land; but he cannot do it *by means of small crops.* To perpetuate fertility he must raise remunerative crops, or have outside means, to import and restore the inevitable waste attendant, alike, on the production of small or large crops. This leads to proposition 7.—*That the replacement of crops, in kind, on cultivated soils on which they grew, cannot restore or perpetuate fertility, though every atom of the plants be returned to the soil, whether the crops be large or small.*

I thus sharply present these propositions, because I am persuaded their clear comprehension will throw a flood of light against the shadowy superstition of ages and vague conjectures, fostered even by the learned of the present day.

In order to a clear understanding, it is necessary to know what essential plant-food must exist in, and be derived by the plant, from the soil and from no other source.

Lime, potash, magnesia, phosphoric acid and sulphuric acid are essential to the life of all agricultural plants. These, with some other substances of plant food, are derived by the plant from the soil. To distinguish these from plant-food derived from the atmosphere, I shall designate them by the general term of "*soil food.*"—This term is suggestive of the fact that the soil, by chemical union with, assimilates food, and prepares it for plants,—a process somewhat analagous to the assimilation of the same by plants, in preparing it for digestion by animals.

For the same reason I shall designate the plant food derived from the atmosphere, whether directly, through the leaves above ground, or from atmospheric compounds in the soil, as "*atmospheric food.*"

These designations appear more precise and certain than those usually employed by writers. They designate *soil food* as the "*inorganic*," and that of atmospheric origin as the "*organic*" constituents of plants. This, in reference to organized bodies, appears to me a distinction without a difference. I fail to comprehend that one is more or less organic than the other. They are both inorganic before they enter living structures; both organic during their residence there; and both, again, inorganic, after the complete decomposition or breaking up of organization.

The distinction necessary to be kept in view, in the present argument, is that one is *earthy*—the other aerial or gaseous; and that on the dissolution of the plant or animal, the former returns to earthy matter, in form of ash or solid deposit, and the latter escapes, in the form of gases, to the atmosphere, except in so far as it may be temporarily chemically combined with matters in the soil, heavier than the atmosphere.

Now, if any one of the substances above enumerated—potash, lime, magnesia, phosphoric or sulphuric acid,—should not exist in abundance, and soluble in contact with the roots, the crop will languish; it will perish, if a single one be absent. In order to produce large crops the soil food must, therefore, abound everywhere in a soluble condition from germination to maturity of the crop.

"*Waste*" *is what escapes from the soil through exposure from cultivation.* The mode of escape is principally by sinking below the cultivated soil and washing away. It may thus escape in a state of solution, or in mechanical suspension in water, or be washed away in coarser bodies, by force of moving waters. By experiments, as that of Lampadius, heretofore referred to in reference to the waste of lime, and by common experience, it is ascertained that, in general, the *waste* of soil food is a hundred times greater than the amount secured and *saved* by conversion into

plants. The amount of *soil food* secured by the crops, though essential to life, is exceedingly small in proportion to the bulk of plants—constituting not more, in general, than from *one to five per cent.* of the constituents of the plants.—The balance, from 95 to 99 per cent., is of atmospheric origin—atmospheric plant food.

A thousand tons of this (the part of plants derived from atmosphere) does not contain an atom of *soil* food, and therefore could not add an atom of lime, potash, magnesia, soda or iron to the soil. If this and the *soil* food appropriated by the plants, (that is, if the whole crop produced on a *cultivated* soil,) be left on the same, it will restore *of soil food* just what it extracted *from the soil*, and no more, which is about the hundredth part of the quantity usually *wasted* in cultivation. Nearly half of what it does restore is silica, which is sufficiently abundant in all soils, if necessary for plants at all, and never needed to be restored or imported. So of substances of soil food, *needed*, the whole crop returned to the soil, we may safely conclude, does not add more than from one to five pounds, whilst a hundred pounds have probably been washed away, and what is *thus added* was furnished by the soil to the crops, and so is only *replaced*. The crops can neither *create* soil food, *increase* its quantity, nor *manufacture* it out of atmospheric food.—Then it follows, that the crops, whether large or small, even if restored entirely, cannot compensate the *loss* of *soil* food *wasted* in cultivation.—To perpetuate fertility, whatever of soil food is wasted in cultivation must be imported from another place—from some other soil, rocks or other solid matter,—or be manufactured on or in the soil, as by the burning of lime, &c., or by natural causes, as chemical changes, abrasion, &c.; or by deposits from higher lands, by floods, &c. Experience shows that these natural causes, ordinarily, do not operate rapidly enough to restore the ordinary waste in *cultivated* soils.

To replace the amount of soil food, potash, lime, magnesia, soda, &c., ordinarily wasted in the cultivation of one crop, would require the quantity of these substances existing not in one but in *one hundred* crops produced on the same land. Or to supply the waste from one acre, *under cultivation*, would require the produce of one hundred acres. As a matter of experience, I have not been able to keep the garden supplied with these substances (soil food) with the manure from hundreds of acres; but have been compelled to go to the lime and magnesian rocks, and the ashes from wood grown in the forests, to restore the waste of soil food.

It may be said that fertility has been kept up for forty years, with no other fertilizer than green clover grown on the same soil. And it may *have been* thus *prolonged* and even improved, but not *perpetuated*. The action of the green manure, other than its restoration of what it *took out*, is mechanical, in the amelioration of the soil, and chemical in the production of changes in the forms of food already in the soil. During decomposition, hastened b its influence, new combinations are formed, soluble, perhaps, only in their nascent, "fresh born" state, in which they may be taken up by plants, or washed away, or again assimilated into the soil, in, at present, a comparatively insoluble state, subject, however, to exposure by the same changes under the same circumstances. In respect to *perpetuity* of fertility, the splendid physical and chemical conditions produced by the green manure would militate against it, exposing more soil food to waste than it restores. Besides, the soil may have been fed by natural causes, as natural importation, washings from higher places, or by rocks in the soil, holding soil food, subject to abrasion from natural causes, and from cultivation, giving off the same as the floods wash it away. So long as these circumstances exist, they may prolong fertility; if they exist forever *they* may perpetuate fertility, in spite of waste.

And so, a soil of great depth, as the black earth of Russia, in the *present* absence of these conditions, but which *has been* subject to them for ages past, may possess enough of soil food to last a thousand, but, perhaps, not a million, years; and certainly not perpetually, unless *forever* supplied from natural causes.

In treating of exhaustion, such soils, being practically inexhaustible, are out of the question, only in so far as they may serve to illustrate and establish truth. As they form such a small portion of the earth's surface, it had been better for man, and the science of agriculture, if they had never existed to induce false comparisons and conclusions. It may also be said, that forests and unbroken prairies perpetuate their own fertility. And so they do, by disintegration of rocks, and amelioration and protection through deposits of vegetable matter,—just so long as they are *uncultivated* forests and prairies, and no longer.

FREEDOM.

[*To be continued.*]

Our French Letter.

Investigations in Beet-Root Culture.

To the Editors of the American Farmer:

The French Association for the advancement of Science, just held at Lille, received several papers of an imporant, but, above all, of a practical character on agriculture. The north of France being the natural home of the beet-sugar industry of the country, that subject naturally came in for prominent attention. M. Peligot has for years been occupied with experiments to establish the relations that exist between the manures applied to beet, and the roots, the leaves, and seed of that plant. He alleges, that the differences in the yield of sugar, and the presence of mineral salts, depends less on the mode of culture than on the nature of the plant in point of variety of species. The improvement of the root is then the most important problem to solve. Beet plants, watered with solutions of soda and potash, gave off the greater part of these salts by their leaves, which are at once, according to M. Peligot, organs of excretion as well as of respiration,—the plant only retaining in its tissue the necessary amount of those mineral matters required for its development. In a dry state the leaves of the beet in question contained from 25 to 30 per cent. of mineral matters, which had been drawn from the soil by the roots. On dividing the roots in two parts, the superior portion contained more mineral substances than the inferior the latter, too, was found to be richer in alkalis hence, roots with large necks or tops, are leas

suited for the manufacturer and better for feeding cattle. The proportion of soda and potash in beet proved, that while the ordinary cultivated plants contained but little soda, beet was remarkably rich in this salt. M. Corenuinder corroborated these facts. The distillers practically recognise also this circumstance in purchasing molasses in those departments of France where the beet is known to contain little soda, rather than in the northern districts, where it contains much. In the region around Lille the farmers are notoriously addicted to employing no other commercial manure than nitrate of soda in the culture of beet, with or without a little farmyard manure; the roots obtained are very large, but very inferior in quality. The principles of sound culture demand that soluble phosphates and potash be added, to at least keep up the fertility of the soil for the succeeding crop of wheat. And it has been found that the beet is richer in sugar the more a combination of fertilizing elements is presented for its development; the plant strikes more vigorously and uniformly, and the leaves, without being voluminous, are larger, facilitating thus the absorption of carbonic acid from the air—that is to say, the principle which operates in the production of sugar in the tissues. It is not prudent to rely on a single artificial fertilizer exclusively, as a soil can become exhausted from the loss of one of its useful elements as well as from the complete absence of all manure. In conclusion, the prospects of the beet harvest are not good this season, owing to the drought; the diminution of the yield will be from one-fourth to one-third below the mean average, and should the recent rain induce a second vegetation of the plant, the yield of sugar will seriously suffer.

Use of Fossil Phosphates, Guano, &c.

At the same association attention was largely given to the employment of fossil phosphates, containing from 70 to 80 per cent. of phosphate of lime, and destined to counteract the exhaustion of lands where nitrate of soda and sulphate of ammonia are exclusively employed. The phosphate is applied in the form of powder, at the rate of 3 cwts. per acre, and is generally spread on the flooring of the stables after the bedding has been removed; it thus mixes with the solid and liquid excrements of the animals, finds its way into the liquid manure tank, &c. The urine in putrifying generates carbonate of ammonia, which, from direct experiments, renders the phosphates soluble and assimilable. A ready but reliable means for testing the purity of guano was announced, to submit a weighed quantity of guano to a red heat; if pure, there will be little ashes, and, if acted upon by an acid, not more than 1 or 2 per cent. M. Deherain submitted the results of his experiments to demonstrate that the nitrogen of the air can be absorbed by arable soils in presence of certain organic matters, and concludes, that what has taken place in his laboratory, under specially prepared conditions, ought to consequently occur with soils. His conditions, however, are not analagous, and this debated question remains still far from settlement.

Agricultural Education in Prussia.

The stimulus given by the Austrian and Prussian Governments to agricultural education is recommended to the serious notice of the French authorities, who are more inclined to cut down the subventions to agricultural institutions, although France is so very much richer in every respect than the two states in question. Of the 70 agricultural institutions possessed by Austria, 29 have been established since 1870; and one of the oldest, the veterinary school of Vienna, dates from 1766. She has technical schools for imparting instruction in brewing, distilling, and preparing flax; in gardening, arboriculture, &c.; pupils are eligible to graduate in all these in due course, and she rewards the most successful pupils by sending eight of them annually to study the farming of foreign countries. Prussia is proverbially the country for general education, and it would seem that it was after her misfortunes she gave most serious attention to agricultural matters. Her defeat at Jena marks the creation of the celebrated college of Moëglin, under Thaër; and her troubles in 1848 led to the appointment of a minister of agriculture. Her grants to agriculture form 20 per thousand of the budget, while that of France is but 3, and this rich endowment is relatively greater for Prussia when the respective population of the two countries is considered. In Prussia the government as well as the locality makes sacrifices to promote agricultural instruction; not only do large landed proprietors and municipalities contribute to the good work, but foremost must be ranked the various assurance companies. Prussia proper has 79 agricultural colleges and schools, more or less richly endowed, imparting not only an elementary but the most complete system of education. There are special schools for the arts and industries connected with farming, for bee and fish culture, for trials of machinery, market gardening, experimental schools, &c. Prussia has been actually prodigal in her encouragements to agriculture in her newly acquired provinces in Alsace and Lorraine; every society, every institution, is subventioned, and the "winter" farm schools, open from November till May, for peasants' sons, aged 18 and upwards, at the cost of 30 francs for the season, are marked successes, and a practically liberal education is therein afforded.

Dissolving Guanos—Use of Fertilizers.

M. Chevreul, the eminent chemist, has been largely occupied during the last year with the subject of guano, which he has treated in his ordinary course of lectures as well as in special publications. He condemns the practice of dissolving guano, thus destroying its admirable molecular constitution, by converting it for most part into sulphate of ammonia. He adds that it would be simpler and more economical to buy super-phosphate, ammoniacal and potash salts, rather than to destroy guano. He suggests to farmers to imitate the market gardeners and horticulturists in general, who make their own composts, from a profound knowledge of the soil they cultivate and the plants they raise, and to remember that a soluble saline manure is not appropriate alike to permeable and impermeable soils. Farmers are commencing to be on their guard respecting the use of auxiliary fertilizers; there does not exist, in regard to the employment of chemical manures, receipts suitable to all circumstances, and guaranteeing uniform advantages.

The Phylloxera—Its Ravages.

The *phylloxera* continues to anxiously occupy the most important place in French rural economy; the vine bug progresses in its devastations, and the new vines that were planted as successors to the old ones destroyed, have been fatally attacked in turn. At the Insect Show now being held in Paris, the phylloxera is the observed of all observers. Nothing in the way of efficacious remedy has been found; but "suggestions" are as numerous as the sands of the sea. One enthusiast recommends "currents of electricity" to be sent down to the roots of the vine! Very respectable evidence has been adduced in favor of coal tar, and lime from gas works; in the case of the latter, a small trench is made around the root of the vine, after the vintage; gas lime is then added, and the winter's rain washes it into the soil. Alkaline sulpho-carbonates are also recommended, but they are expensive, and M. Rohart has shown that the very absorbent power of the soil is in itself an obstacle to the best of insect-killing agents. M. Lichtenstein was in hopes that he had discovered that the phylloxera, in its winged state, migrated to oak trees; further investigation showed that it was not the true vine bug, but an independent species. Finally, Dr. Turrel, of Toulon, attributes the vine disease to the forced culture the plant is subjected to, the absence of a due supply of potash it so much requires, and also to the excessive pruning of its tendrils, which emasculates as it were the vine. He further recommends to raise new plants from seed, and rear them on suitable soils, and not destroy insect-feeding birds.

Curing Hay.

From an analysis made in Belgium, of two samples of hay, derived from the same field, mown at the same time, but saved differently, it appears that hay left thirteen days exposed to wind and weather, and that saved in the course of three days, differ as much as nine per cent. in soluble elements, which, in point of nutritive value, is estimated by a loss of five-sixths, for the hay injured by the weather.

Winter Forage for Stock.

In the districts of Montargis and Chateau-Renard, the farmers are gathering, according to the custom, the green branches of poplar trees, elms, ash and plantain; these are dried, made into bundles, and stacked for winter forage. In the west of France bruised furze is the common dietary for cattle, and, when mixed with oats or barley, for horses also.

A M. Penard has constructed a graduated glass tube, corresponding to a table of figures; placed on the end of a hogshead of wine, communicating with the l quid, it reveals contents, leakage or robbery. F. C.

Paris, Oct. 3, '74.

Gunpowder (Baltimore Co.) Farmers' Club.

Messrs. Editors American Farmer:

The October meeting of the Gunpowder Agricultural Club was held at the residence of Dickinson Gorsuch. W. W. Matthews was selected foreman. Among the guests present were Messrs. Henry Carroll, Sr., and Henry Carroll, Jr., of My Lady's Manor.

Saving the Apple Crop and Fodder Crop.

On the tour of inspection the Club passed through our host's orchard, where the novelty of fodder-houses for the storage of apples was encountered. These houses are formed around the apple trees by resting fence rails in the crotches of the same. They facilitate the operation of gathering, and, besides exposing the apples to less handling and consequently less liability to bruise, are, our host thinks, the right sort of receptacle during the period of shrinking and wilting, and by thus guarding against dampness and heat the fruit can be relied on to keep longer. The quantity of apples and the tenacity with which they still hung (date, Oct. 24th,) were subjects of remark. It may be worth stating that Mr. Gorsuch cultivates the larger portion of his trees yearly in fodder corn, manuring for each crop. The portion not thus cultivated shows unmistakable signs of decline.

In the barn a double harpoon fork was put to work, hoisting, by a simple arrangement of pulleys, hay and long fodder to any desired height or place, and demonstrating its great value as a labor-saver.

Best Crop to Follow Corn.

The Club discussed the following question:—What crop should succeed the corn crop, and how treated?

Edwin Scott preferred to follow corn with oats. He had always had better success with wheat after oats than after wheat or rye. Oats clean the ground and get it in better condition for wheat. The land gets two ploughings instead of one. If he left his corn ground over, he would set either to clover or timothy. He had never noticed any difference in his grass sets after oats.

A. J. Gent agreed with Mr. Scott, that oats lighten the land, and leave it in better condition for wheat and grass, though he considers it far more exhaustive after corn than wheat. Leaving grasses out of consideration, it is better to sow wheat and follow with wheat.

D. Gorsuch.—His present plan is to take part of his corn ground for corn ploughing in the fall and manuring in the winter. The remainder of his corn ground is seeded to rye. The following fall this is manured, treated to from two to three hundred pounds of commercial fertilizer, and seeded to wheat and grass. The part cultivated the second season in corn is treated to a commercial fertilizer and seeded to rye and grass. He prefers this plan to any he has pursued heretofore,—sowing no oats at all. Grass takes better after rye, because it grows more open than wheat, and after harvest its higher stubble protects the young set.

N. R. Miles always sows oats after corn. He generally gets the best sets after oats.

S. M. Price.—With our corn stubble we are generally governed by the condition of the soil; if the land is in good heart, we sow in wheat and then stubble up again and put in wheat a second time—the land is then in good condition for a catch of grass. If not in good heart, we put part in rye and follow with wheat. Thin ground is sown in oats and stubbled up for wheat. We like the fertilizer or manure to get a crop of wheat after oats. We are opposed to letting lie over, on account of the great difficulty of getting into order. The present system of rotation

after corn runs the ground too hard, and the day is not far distant when farmers will adopt the plan of sowing clover in corn at the last working. We tried it last year, and got a beautiful set. To have turned this down would have improved the land very much. Question—Is the average money value of the wheat crop equal to that of the oat crop. Answer—That is owing to the condition of the land. Some land is too rich for oats. If the land is good, of an average season it will bring 15 bushels of wheat, which at former price ($1.50 per bushel) is better than 30 bushels of oats, and we seldom get over that amount. There are so many things to be considered that a definite answer to the question is almost impossible. Oats will bring cleaner wheat. For a few years back oats and hay have both been high, and as oat straw is a good substitute for hay, these two circumstances have combined to enhance the value of the oat crop.

I. M. Price prefers following corn with clover if he could always do so. He has had some very good sets of clover by sowing after the last workings of corn. Looking to keeping up the improvement of the land, this is decidedly the best plan. If we choose we can have a good pasture field, mow, or plow under, which last for a good crop of wheat is almost as good as any commercial fertilizer we can buy and put on. The last corn stubble which we seeded to clover gave a heavy growth. A portion of the field was in oats; this was well manured for the wheat which followed. The part seeded to clover was, with the exception of several acres, plowed before harvest. The clover sod gave him a better crop of wheat than the oat stubble. On the average of a number of years, he thinks it would be more profitable to sow corn stubble in clover than in wheat, oats, or rye. Question—Did the wheat yield as much on the part plowed before harvest as on the part plowed after? Answer—His impression was that there was as much wheat, but a half acre fell before it filled. Thinks salt, at the rate of two bushels per acre, would strengthen the straw. Where he used salt, the straw stood up better and was heavier.

T. T. Gorsuch stated that other experiments with salt had resulted the reverse of this.

The remaining members, with one exception, practice the usual rotation of wheat, oats or rye after corn. The member who forms the exception is trying barley after corn, but so far without gaining by the change. He claimed that oats after corn had paid him better than wheat or rye. He advocated following corn with clover and plowing down after harvest for wheat. T. G.

Baltimore County, Nov. 16, 1874.

On Feeding Cattle—Reply to Mr. Dulany.

Editors American Farmer:

In answer to R. H. Dulany's inquiry for authority on the value of different articles of feed, I would refer him to the accurate and reliable table of values of thirty-one different kinds published by Lawes & Gilbert, England.

Mr. D. need not have been surprised at his system of feeding not producing the best results, if he had examined the proportion of flesh and fat-producing constituents in the feed used by him. He states that he fed principally straw, corn and cob meal and wheat bran. By these tables the amount of flesh-producing matter in these articles are given as follows: Straw, .32; bran, .55; cornmeal, .78. Mr. D. reduces the value of his corn, by grinding the cob with it, one-half—leaving its value .39.

By a further inspection of the tables, of the value of manure made from these articles of feed, we find that they put straw at $2; bran $14, and cornmeal $6. These are relative values; that is, if the manure from a ton of straw is worth $2, then bran is $14 and cornmeal $6. This shows that a large part of the virtue of the bran, as a flesh-producer, is not assimilated by the digestive organs of the animal, but is retained in the manure. We all know that the amount of flesh and fat-producing constituents of straw are so diffused that only the healthiest animals can live on it in the most favorable weather;—that is, the digestive functions of the animal must be of the best to enable it to eat and digest enough straw to assimilate enough of the carbon and nitrates to compensate for the ordinary waste. Mr. D.'s mixture of corn and cob meal, wheat bran and straw, is little if any above the value of straw alone as a flesh-forming food; indeed, probably less, allowing the deficiency of the bran in this particular, as shown by so little of it being retained by the animal; which is evident from its making a manure so rich.

It seems to me that, had Mr. D. fed his cornmeal pure, mixed with straw to give sufficient bulk, he would have had no reason to doubt that his gain in weights would compare favorably with N. Y. feeders. But he dilutes too much the virtue of the only feed that has any in his mixture, to wit:—the cornmeal; first with straw, then with the cob, and lastly with bran.

A better use for him to have made of his bran, would have been to feed it mixed with meal to young growing animals, which were too much inclined to take on fat—the constituents of the bran being just what is wanted to build up the bony frame of young growing animals.

Excuse the length of this communication, which is not written in any spirit of criticism, but only to draw out ideas and facilitate comparison by which the truth, as also the best methods, may be evolved. Hoping that Mr. D. may try and publish further experiments in feeding, I am yours, truly, A. S. L.

Statesville, N. C., Nov. 4, '74.

We give as *apropos* to this question the following extract from an article from Mr. X. A. Willard, an authority of repute in such matters:

Oil-Cake or Bran.—Mr. Willard gives the following comparison between oil-cake and bran:

Their relative merits will be seen by the subjoined comparison of the exact weight of each sort of ingredient contained in 2,240 lbs. of bran and oil-cake severally:

	Oil-cake, lbs.	Bran, lbs.
Nitrogenous, or muscle-forming food (albumen, gluten and casein)	490	448
Heat-giving and fatty substances { Starch	897	1,232
Heat-giving and fatty substances { Fat	252	112
Mineral & bone-forming substances (phosphates of lime, etc., alkaline salts)	154	168
Water, husk, waste	434	280

The quantity of ash in both is almost the same. In both, too, we find the same sorts of organic

compounds, gluten, starch, fat, &c. According to Prof. Johnson, phosphoric acid in bran is equal to that in oil-cake. There is a table giving the average quantities of water, organic matter, ash, albuminoids, carbohydrates, etc., crude fiber-fat, etc., in various agricultural plants and products, according to analyses of Profs. Wolf and Knop.

In this table the proximate composition of wheaten bran and oil-cake are given as follows:

	Water.	Organic matter.	Ash.	Albuminoids.	Carbohydrates.	Crude fiber.	Fat, etc.
Wheat bran..	13.1	80.8	5.1	14.0	50.0	17.8	3.8
Linseed cake..	11.5	80.6	7.9	28.3	41.3	11.0	10.0

From this it will be seen that the albuminoids and oil in the oil-cake, as compared with the same in bran, are considerably higher than in the first table presented.

Bran makes an excellent feed for dairy stock, and considering the less cost at which it may be obtained, it will probably give better results for the money expended.

It must be observed, however, that no chemical analysis will show the exact nutritive value of any kind of food. Nutritive value is found by putting the substance into the stomach of a living animal and noting the results. It is time we have some knowledge of the nutritive value of sugar, starch, oil, albumen, gluten and other constituents of food; and from the relative proportion of these in a given substance, we can guess as to its general nutritive effect. Still there are some kinds of food that produce better results than the percentage of their nutritive constituents would seem to show.

We advise our correspondent to make an experiment—feeding for a time with bran and then with oil-meal, and noting the results in each case. In this way he will be able to satisfy himself as to which is the most economical food.

The following from Prof. Voelcker, of England, will show his estimate of the high value of cotton-seed meal and an analysis of its chemical constituents:

1. The best cotton-seed cake is richer in oil and albuminous (flesh forming) compounds than linseed-cake, but contains less mucilage and other respiratory constituents.

2. The mineral portions of cotton-seed cake resemble closely in composition that of linseed and other oil cakes. Like the ash of all cakes, it is rich in earthy and alkaline phosphates, and well adapted to supply animals with bone materials.

3. As far as indications of chemical analysis can be depended on, the best decorticated cotton-seed cake possesses about the same value as linseed cake.

4. Decorticated cotton-seed cake and oil meal are, in comparison with other artificial food, decidedly cheap feeding materials, and both no doubt ere long will find that favor with the British farmer which a really valuable and cheap article of consumption is certain to command.

ANALYSIS OF COTTON SEED.

Water	7.67
Oil	14.93
Albuminous compounds, flesh-forming principles	43.21
Gum, mucilage, sugar, and digestible fibre, (heat-producing)	14.47
Cellulose (indigestible fibre)	11.45
Mineral matter	8.27
Total	100.00

Merinos in France.

Our French correspondence keeps the *American Farmer* posted in all the latest improvements and discoveries in Agriculture, not only in that country, but in the most advanced districts of Europe. After the letter on a preceding page was in type, we received another for our next issue, from which we extract, in advance, an item on Sheep-raising in France. It says:

"Professor Sanson spares no labor, no investigation, to demonstrate that the Merino breed of sheep, known by the name of Soissonnais, is the first in France in point of precocity and in length, fineness and strength of wool; the latter surpassing even colonial wool in these respects, as well as in price. He concludes, therefore, that his countrymen have no reason to complain of the competition of foreign wool. M. Sanson has studied several flocks of the Merinos in question, and he attributes the marked improvement in the breed to the development of beet-sugar factories, which places so much pulp at the disposal of breeders and fatteners. The mean weight in some lots was from 175 to 190 lbs. per animal, and, though newly shorn, the Merinos would fully bear comparison with the best Dishleys in the country. The head of the Soissonnais Merino is small; the neck short, and without folds: chest full; limbs reduced to the minimum of volume and length, with four adult teeth at least—for sheep only 18 months old. These are certainly the characteristics of precocity. The price of hiring a ram varies from 250 to 300 francs. The fleece weighs 13 lbs., and sells for fr. 18. The wool is long-stapled, exceeding 5½ inches in length, is very strong, fine, soft and tenacious, and does not lose more than 40 per cent. in washing Ten samples of this wool have been compared with ten other samples of colonial wool—from New Zealand, Adelaide and Victoria, as employed in the factory of Villemenot & Co., of Reims, and were found after various scientific tests to be superior; and Kræmer, of Zurich, shows from his table of comparative prices of wool during several years, that prices of all wools have an upward tendency, that of French wool markedly so."

Stock Notices.

The sales of cattle and horses, in this country as well as in Canada and England, have been very numerous within the last month or two.—The *Short-horns* maintain the high prices which have ruled for some years past. We noticed in our last the sale of Mr. Cheney, in England, where the cows and heifers averaged £550 each, the highest average ever recorded; two of the animals sold for 1,700 and 1,785 guineas. And now we see it stated in the English papers, that the Earl of Bective has refused an offer of 3,000 guineas ($15,750) for the fine bull calf lately produced by his lordship's American purchase, the Tenth Duchess of Geneva.

This goes to prove that our English friends were not true prophets when, on the strength of the sales last year in this country, at which a number of animals were purchased to cross the water, it was very plainly intimated that English buyers might be in better business than purchasing Short-horns in the United States. The home supply was ample—their readers were informed—and the result of these distant purchases would be, at best, but problematical.

"In response," (says the *Country Gentleman*,) "we took occasion to express the belief that the Short-horns thus far carried to England from this country had invariably brought a very large profit to their buyers, and that the English bidding at New York Mills was due "almost as much to the great success of previous importations from America, as to the demand for Duchess blood." If such was not the case, we asked for a correction—which has never come.

In lieu of a reply in words, however, we have the response afforded by Mr. Cheney's recent sale; "the first occasion," says the *London Field*, "on which the offspring of the recent re-importation of fashionable Short-horn blood from beyond the Atlantic constituted the main feature of the day." Of 27 lots, the sires of 24 and the dams of 11 were bred in America: general result, an average, throughout, nearly £50 higher on each animal than had been ever reached before in Great Britain—even at the very extraordinary sales of the preceding fortnight!"

A sale of the well-known Waldberg herd, of A. B. Conger, New York, took place on the 14th, at Chicago, Ill. The average price for females was $415.90; and for males, $236.44. The highest prices for cows was to Colonel Taylor, London, C. W., for Primula second, $1,800; and for Primula third, also to Col. Taylor, for $1,700. The highest priced bull was 17th Duke of Airdre, to Col. Taylor, for $900. These sales serve as a sample of many others.

A herd of *Holsteins* has just been safely landed at New York, imported by John H. Comer, of Goshen, Orange county, N. Y. They are represented as in fine condition, and are described as splendid specimens of this breed, being very large and heavy, and weighing at three years of age 1,200 to 1,500 ponnds each. The cows give 20 quarts and upwards of milk per day. The herd comprises one ten-year old bull and six cows, and the cost of importing them was over $5,000.

We have before noticed the imported herd of Holsteins of Mr. Saml. M. Shoemaker, of Baltimore, which was on exhibition at the State Fair at Pimlico, and which was worthy of the consideration of lovers of fine stock, but we have seen no published intimation that the society took any notice of them.

POULTRY FOR FARMERS' TABLES.—Farmers do not use enough poultry on their tables. It is too much the case that the staple is pork the year round. It would be well if poultry was substituted in great part. In proportion to the nutriment they afford, fowls furnish cheaper diet than swine. If as much pains were bestowed in housing and feeding fowls as hogs, there would be a largely increased production of the former, and a very appetizing, nutritious diet might be afforded to the farmer's family. Poultry furnishes food suited to the demands of the hard-working laborer in the field, and it is equally adapted to the women and children. It is a crying shame that in so many farmers' families, even "well-to-do" people, the growing children have so little set before them that is not too gross and coarse for their needs. The farmer and his sons frequently feel above any such bother as attending to chickens, though it is not considered beneath their dignity to take care of a litter of pigs. Yet the fowls that are despised as "small potatoes," may bring in more money, in proportion to the outlay, than the pigs. Indeed, from careful experiments, we are satisfied that if attention and a fair degree of skill are used, a lot of poultry may be marketed with double the profit that would be derived from the same value of pork. Fowls digest grain more thoroughly than swine do; no portion capable of being assimilated is wasted. If it will pay to produce poultry for the market, it will pay the farmer to raise it for use upon his own table.—*Live Stock Journal.*

Words from Joseph Harris.

This is what he thinks of farmers' present opportunities:

"If, in these days, a farmer makes any real improvement in seeds, vegetables, or animals, the fact is mentioned in the agricultural papers, and it is soon known throughout the world.—Young men are apt to think that all the great discoveries have been made, and that there is now no chance for further invention or improvement. It is a great mistake. There never was, at any rate in agriculture, so many opportunities for acquiring reputation, honor and remuneration, as at the present time. Let young men bestir themselves."

And this of fodder corn, which agrees with what we have so often recommended:

"During the drouth, those farmers who had a good patch of corn fodder got full pay for their abor. In five cases out of six, however, farmers n this neighborhood sow their fodder corn broadcast, and in a dry season, when the green fodder would be of most value, the crop is burnt up.—There is no fact more clearly proved, I think, than that corn for fodder should be drilled in rows, and the land kept clean and mellow by the frequent use of the cultivator."

And this of the best use for Western farmers to make of wheat at its present low price:

"There will be thousands of bushels of American wheat fed out to English pigs and cattle the coming winter. Our millers and grain speculators think we have got such a large surplus of wheat that they can get it at their own price. I tell them that the corn and oat crops are a failure, and that, at the present and prospective price of pork, the Western farmers can well afford to feed their wheat at home to the hogs, and I hope they will do it rather than let all the profits go to the railroads."

The Dairy.

Deep and Shallow Setting of Milk.

It has been a mooted question as to the comparative value of deep and shallow setting of milk, for the formation of cream. To settle this vexed question, the Solebury Farmers' Club of Berks Co., Pa., appointed a committee of most reliable dairymen to investigate and report on the point at issue, who selected, as the best place for trial, Eastburn Reeder's new dairy house. The report says:—

"The pool for deep cans is 36 inches long, 12 inches wide, and 20 inches deep, holding 36 gallons of water. This pool is filled with the melted ice-water flowing from the ice-box in the top of the refrigerating or cooling cupboard, and when it is filled the surplus water is conducted in pipes to the drain, and passes out of the building. The melted ice-water keeps this pool at a temperature of 58°. Four deep cans were expressly made for the purpose, 8¼ inches in diameter and twenty inches deep, capable of holding 5 gallons or 20 quarts of milk, if filled to the brim; but 18 quarts or 4½ gallons fills them 18 inches deep, which is quite as deep as they should be filled for convenience in handling. A "conical-shaped dipper," of the approved pattern, was also made for dipping off the cream from the deep cans, and likewise a large kettle, capable of holding 10 gallons, in which to mix all the milk used in the trial.

"The trial commenced on Monday morning, August 10th, 1874. On account of a scarcity of milk in the mornings, but 8 gallons were used at a time during the trial. Four gallons of measured milk were put in one deep can, filling it just 16 inches deep, and weighing 34 pounds. The same quantity of this previously mixed milk, by weight and measure, was put in 4 ordinary tin milk pans (4 quarts to the pan), and filling them 3 inches deep. This was repeated for 14 milkings, one week—making a total of 476 pounds, or 224 quarts of milk, 16 inches deep in 14 cans, and the same amount in 56 pans, 3 inches deep.

"The water in the pool, as before stated, was at a temperature of 58°; when a can of warm milk was immersed in it, it raised the temperature to 60°, but by the expiration of 10 or 12 hours it would be lowered to 58° again by the inflow of fresh ice-water. A piece of ice was put in the pool after the first day, so as not to let the temperature be varied any more than could be helped. The pans of milk were set on a stone floor where the temperature was 60°. During the whole trial the temperature ranged as follows: In the pool, from 58 to 60°; in the milk room, from 60 to 68°. Great care was taken to preserve the uniform temperature during the whole trial, by admitting cool air at night and excluding the warm air during the day, which necessary feature is under complete control. The milk in both cans and pans stood 48 hours, when it was skimmed. The cream raised one inch in depth in the deep cans. The amount of cream obtained from the deep cans was 46 lbs., from the shallow pans 57 lbs. The last skimming was done on Tuesday evening, August 18th, when the cream was placed in a cooling cupboard and the temperature lowered to 54°. The churning was done Wednesday, August 10th. The 46 pounds of cream obtained from the deep cans was churned first—butter came in 30 minutes, and yielded 15 pounds 10 ounces. The cream from the shallow pans (57 lbs.) was churned immediately afterwards—butter came in 50 minutes, and yielded 21 lbs. 6 ounces. The result of this experiment, which was conducted as fairly as possible, indicates a gain of 5 12-16 pounds in favor of the shallow pans, or over 25 per cent."

"The milk used in this trial was the product of three thorough-bred Jersey, two Guernsey, and three grade cows, and averaging over five pounds per cow, if all the butter had been obtained from all the milk. The difference in time of churning is attributable to the churn being overloaded with the cream from the shallow pans. The butter from the deep cans was pronounced by some to be a trifle the best, although both would rank as strictly first-class. The dairy-house, in which the experiment was conducted, has been so fully described that nothing more is necessary in that particular. It is especially adapted for convenience, and the making of gilt-edge butter,—being both cool and dry. The floor had been washed on the morning of the 19th, and was perfectly dry by 11 o'clock. The cooling cupboard under the ice-box is provided with slate shelves, on which the butter is placed to harden before being sent to market. The pool, before mentioned, is a very suitable place to keep the cream before churning, as it should be kept at a lower temperature than the milk. It is not built so much under ground as to make it tiresome in carrying the milk in or out of it: in fact we, after giving it a critical examination, are unable to tell how it could be improved."

Col. Waring, who is the apostle of deep setting, has the following comments on this in the *Agriculturist* for November:

"I am entirely at a loss to account for this result, nor have I any equally careful experiment to set against it. At the same time, I am quite satisfied that, were the facts known, there would be found some good reason for questioning its value. Before we settled upon the Deep Can System ourselves, we made alternate trials, week and week about, with the deep and shallow setting. We invariably got a trifle more butter from the deep than from the shallow, the herd being the same and getting the same treatment, slightly more, but not enough more to be of consequence. The improvement that we found was in quality; in a great saving of labor, and especially in a greater uniformity, without regard to the temperature of the air. Since that time, some three years ago, we have entirely abandoned shallow setting, and remained more than satisfied with our deep cans. Surely, if there had been anything like the difference in quantity which the Solebury experiment developed, we could not have failed to detect it, and should certainly have abandoned the system. Had the quantity of cream obtained at Solebury been

larger in case of the deep can setting, I confess I should have been somewhat staggered by the difference in the amount of butter; but if anything is determined beyon i question, not only by my own experience, but by that of others pursuing the same course, it is, that whatever may be the amount of butter produced, the amount of cream is universally much larger, a fact which is undoubtedly due to the less exposure of the cream to the drying effect of the air. Cream taken from a shallow pan, set for even 36 hours, is almost universally somewhat clotted and leathery from its drying, while that taken from deep cans is always thin and fluid, showing greater content of water, and being therefore much more in quantity.

So long as milk remains fluid, (free from coagulation,) and so long as the particles of cream are lighter than the particles of milk, as they always are, these must inevitably rise, even if set eighteen feet deep instead of eighteen inches, and we find not only a very large amount of cream separated, even in 24 hours standing, but also the peculiar blue look, which only thoroughly decreamed milk can have; and, after skimming, the milk returned to the pool, in order to avoid curdling, never raises any sensible amount of cream; it is, in fact, thorough skimmed milk.

I have no intention of entering into a discussion on this subject, for the reason that not living at the farm, and not being able to give constant personal attention to the details, I could not make an experiment for which I would be willing to vouch. I have stated Mr. Reeder's case in his own words, and must leave my readers to draw their own conclusions, and make their own investigations, but I shall not, myself, be led by the disastrous results he sets forth, to change my present system; feeling confident, that were his water-pool like mine, and his milk and his processes like mine, he would find the result entirely different from that which his own experiment has developed. Since our dairy was established on its present basis, we have never, in the coldest or in the hottest weather, had the least difficulty in making butter of uniformly good quality, and entirely acceptable to our over-particular customers."

New York State Dairymen's Association. The fourth annual convention of this association will be held at Binghampton, N. Y., on the 9th and 10th December. At these meetings the ablest men engaged in dairying are selected and invited to prepare papers upon the matters of most interest to those engaged in the business, and a vast body of useful information annually emanates from this source. In the call for the meeting, just published, a list of the lecturers, and their particular subjects, are given; and after the reading of each paper, there is to be time allowed for a full discussion thereon.

Dairy Items.—Mr. Edward F. Jenkins, of Baltimore Co., Md., who was one of the earliest breeders of Jerseys in this State, having formed his first herd of that race over twenty years ago, recently stated to us that one cow had yielded him, in calves and butter sold, about three thousand dollars. Mr. Wm. C. Wilson some time ago showed us one of his oldest cows, then fattening, from which he had had a return of, we think, over $2,400. We should be glad to have an authentic and detailed report of both these cows.

Mr. Henry Carroll, of Baltimore Co., informed us recently that, from July 1st to October 1st, he had made in his dairy and marketed in Baltimore, 2,500 lbs. of butter. His herd is composed mainly of Jerseys, or high grades.

Live Stock.

Superior Wool Producers.

To the Editors of the American Farmer:

The *Western Agriculturist* says the statement has been recently published that blankets made at Minneapolis, Minnesota, are exported to England to furnish the new lines of palace sleeping cars. Specimens of this manufacture were sent to us by the makers, Messrs. Gibson & Tyler, of such marvellous beauty that we were constrained to request these gentlemen to inform us as to the source of the raw material, who replied to us as follows:

"The best wool we can get for our fine blankets is the American Merino. We have tried a variety of foreign wool, but as yet have succeeded in finding none that will produce as *white* and in all respects as elegant blankets as we make from the Merino fleece of the Northwest. We manufacture annually about seventy thousand pairs of blankets, the most of which are made from wool produced in our own State. The sheep of Minnesota are remarkable for their vigor and freedom from disease, and as a result we are sure to get strong, even wool. This State is very young, and the production of wheat is at present the all-absorbing subject with our farmers; but our wheat fields are sure, under the present system of cultivation, to become impoverished, and sheep will, in time, figure an important part in the reemption of these lands. The capabilities of the West and Northwest for the production of wool can hardly be over-estimated. If wise laws prevail, the day is not far distant when we shall not be compelled to buy a pound of wool in any foreign market, and when we shall lead the world in the production of all kinds of woolen fabrics.

Our Western tailors returning from the East this spring admit for the first time that American cassimeres surpass in beauty and workmanship those made in foreign countries. This is certainly very gratifying, and foreshadows the great success of the woolen industry."

The Proposed Herd-Book for Sheep.

At the meeting before the last of the Ohio State Wool Growers' Association, they concluded to have a public registry for sheep; and designated the Hon. John H. Klippart, Secretary of the Ohio State Board of Agriculture, as a suitable person to conduct it. The matter came up again at the last meeting of the Association, held on the occasion of the State Fair, and the following is a report of the proceedings as given by the *Ohio Farmer:*

"Mr. Stevens moved that the subject of the publication of a Sheep Herd-Book be taken up—which

was carried. J. H. Klippart, who was selected by the committee to publish this work, was then called upon to submit a proposition with a form for recording. He did so; asking for a guarantee of sufficient patronage to warrant him in going ahead with it, and proposing the record of sheep in the book by flocks, and giving history, with facts of breeding qualities, qualities of wool, the latter to be tested by microscopical examination, and results given, and pedigree as far as known.

A very lengthy discussion followed, some advocating Mr. Klippart's plan, and many others not suited with it. Many thought the work, to be of any real value, should contain none but animals that were known to trace direct, on both sides, to the Humphreys' importations, and others thought in that case there would not be enough to make the work of any importance. It was fairly demonstrated that there exists a wide difference in the wishes of the few who have pure-pedigree sheep, and the many who have flocks, whose entire pedigree is not known, which must be compromised in some way before the work can take the place it should among the breeders of fine-wool sheep of the country. Very much time was spent in arguing the matter without arriving at any definite plan.

The following committee was finally appointed to draft and approve a plan for the book, to be submitted at the regular meeting in January next, viz: Messrs. Kirkpatrick, Humrickhouse and Klippart."

How Wool-Growing Pays.

Washington county, Pennsylvania, is claimed to be the banner county of the State in wool-growing, and they take a great interest in this branch of farm husbandry. The product this year was over 2,000,000 lbs., which brought over $1,000,000 in money into the county. As the county is not run to sheep specially, the bringing of a million dollars *every year*, from outside, can scarcely fail to insure a permanent and conspicuous prosperity. The people of many other sections, by imitating the practice of our Washington county friends, can secure in a measure their thrift. One thing for which Washington county is remarkable is the attention which sheep owners give to the improvement of their flocks, and the constant effort they make to hold them to the highest standard. W. C. RIDGELY.

Bethany, Brooke Co., W. Va., Nov., '74.

The Cost and Profits of Getting and Growing a Flock of Merino Sheep in the Southern States.

Messrs. Editors American Farmer:

At the request of several subscribers to your paper, through which you have labored so long and ably to help your countrymen to improve their farms and better their circumstances, I have consented, with your permission, to occupy some more space in the next number, and after asking the forbearance of those who may feel no interest in this, we will show the cost of getting up and growing up of a flock of Merinos and grades. 40 good strong common ewes will cost about $2.50 each, say $100, and 8 suitable Merino ewes and 2 Merino rams will cost when there, say $25 each, or $250. 100 bushels of mixed feed, consisting of bran, oats, rye, corn and buckwheat, will cost about $35. One ton of hay can be grown and put up for about $5; feeding and tending, say 10 cents average per day, $36. Salt, shearing, &c., 15 cents per sheep, $7.50, and then for range of pasture 5 cents each per month, $24, and 6 per cent. interest for first investments, $21. We then are out in all $478.50. Next spring and during the year we receive in return on this, 50 fleeces of 4 lbs. each, say 160 lbs., and 10 fleeces of 10 lbs. each, say 100 lbs.—a total of 260 lbs. at an average of 35 cents per lb. equals $91. Manure and droppings on the fields and the stable, $20; and after reasonable allowance for loss say 40 lambs increase, worth $5 each to build up a flock, these then equal $200, or a total of $311. Then for the second year we have total cost for the flock then only $167.50, at cost as above. For interest on this $10.05; expenses as above $128.50, and a *pro rata* on the lambs, $102.80, in all $408.85. Then for this we have the second year say 40 fleeces of an average of 4 lbs., 160 lbs.; 10 fleeces of 10 lbs each, 100 lbs., and 40 fleeces each averaging 5 lbs. equal 200 lbs.; thus a total of 460 lbs. at 35 cents per lb. makes $161, manure as above $20, and a *pro rata* for the 40 lambs is $16, and 40 more lambs as above, worth $5 each, equals $200,—a total of $397. We then have 130 sheep of mixed ages, and are now out of pocket in all only $11.85.

Our flock has increased and improved; it has become civilized; our farm more fertile, and in places the rich carpet of green attracts the attention of the traveler. Our neighbors talk of all this. We become enthusiastic and interested. This becomes contagious in the family. Our life partner now talks of Merinos and their management, and the children in turn claim the underlings and care for them and grow them up into good sheep; they are paid for this, and it runs through the family, for it is as certain as are the measles and small-pox in others. If this does not weary you, I may at some future time show some of the reasons why some have started a flock that did not meet their expectations, and I shall then have complied with their request.

Brownsville, Pa., Nov., 1874. JOHN S. GOE.

JERSEYS IN THE SOUTH.—A friend in Darlington Co., S. C., thus writes of some Jerseys sent him through the *American Farmer* Agency: "The heifer you sent me is a valuable one, and greatly admired by all who see her. She has been milking *daily* since she was eleven months old, and now, at thirty months, has her second calf two months old. She was giving eight quarts a day up to the day she calved the second time, though I had tried to dry her up a month before the time for calving. She and the bull of the same breed have stood our climate well—never sick a day; and the calves from my Devon cows, by the Jersey bull, are promising."

Our shipments of stock have almost uniformly been successful; but a pair of Jerseys recently forwarded to Marshall Co., Miss., arrived in very bad condition, notwithstanding they were sent by express and made a quick trip. This was owing, we suppose, to the hurried handling they received. Water transportation is, when practicable, safer and cheaper.

We published from a copy forwarded us by our correspondent, Mr. Ridgely, of W. Va., the proceedings of the National Wool Growers' Association on the subject of the proposed Reciprocity Treaty with Canada, by which the wool crop of that Dominion would be brought into this country to compete with that of our flocks. At a meeting of farmers of Kansas and Missouri the representatives of the Wool Growers in the National Association "were instructed to use all efforts in securing our wishes with Congress respecting the Reciprocity Treaty."

In addition to which the following resolution was adopted:

"That we ask the Legislatures of Kansas and Missouri to enact a law for their respective states which will impose a license or tax of one dollar on the owners of each male dog, and three dollars for each female dog, the revenue from said license to constitute a fund for the reimbursement of damage done the flocks of these states by dogs."

DANGER OF USING CARBOLIC ACID.—The veterinarian of the *London Field*, in a long article on this subject, shows that all accidents, resulting from the use of carbolic acid in any form, are to be attributed entirely to carelessness in the preparation of the acid for use in the various mixtures made for the purpose of destroying parasitic insects. The acid in its pure form is no doubt poisonous, but the various preparations recommended by veterinarians are harmless if made and used according to directions. Farmers, as a class, are inclined to the use of strong remedies, and if a preparation of one-fiftieth part carbolic does good, they are tempted to, and often do, try one with one-tenth or more of the acid.

ITEMS.—The National Short-horn Breeders' Convention will be held at Springfield, Ill., on 2d December. The association is formed of the most intelligent breeders of the United States.

A convention was held in Easton last month, composed of delegates from the eight granges in Talbot county. There were eight delegates from each grange, five gentlemen and three ladies. Capt. E. L. F. Hardcastle, of the Easton Grange, was elected President; E. T. Benson, of Royal Oak Grange, Secretary; F. Carroll Goldsborough, gatekeeper, and John Outram, steward.

The Patrons of Husbandry of Calvert county are making preparations for celebrating the anniversary of the organization of the order on the 4th inst., to take place at Prince Frederick. Addresses will be made by J. S. Robinson, lecturer of the State Grange, and by Dr. T. M. Cransy, and Mr. Richard M. Hagner has also been invited to deliver an address.

PETER HENDERSON'S CATALOGUES.—See advertisement elsewhere. Mr. Henderson is well known as the author of "Practical Floriculture" and "Gardening for Profit," two works which have had an universal sale, and done more, probably, than any others ever published in this country, to popularize horticultural pursuits.

Horticulture.

Eastern Shore Talk.

Messrs. Editors American Farmer:

That sly scamp with a white cravat who stole the peaches last spring has been very shy of putting in an appearance this fall. Here we are at the end of the first third of the month of November with the weather of September. The frosts have been so light that only the most tender plants are at all injured, and to-day the garden is gay with verbenas, scarlet geraniums and roses, while the chrysanthemums are fairly revelling in the hazy sunshine of the Indian Summer. The days come and go with the same warm, smoky glimmer until we really cannot recollect when we had a rainy day. The farmers are grumbling (you know they always are grumbling about something) at the dry weather, and fearing the "fly" and a thousand other evils to the wheat crop, while we who have no wheat are quite happy that it takes so little from our coal pile to warm the tropical plants, while the greenhouse proper is luxuriant without any fire. How much longer this dreamy weather will last it is hard to say, but we may reasonably expect a killing frost before long.

The sunshine has called us out-doors so much that it has been a long time since we felt like writing for other people's perusal. The out-doors season of 1874 is, however, about closed up, and with the crops of fruits and flowers we have striven to gather a crop of notes on various matters, so that the successes and mistakes of the season may serve us a turn in our next bout with rain and sunshine.

TOMATOES.—Many of your readers inquire whether we have anything new to record in regard to the tomato crop, and for answer we give our experience and conclusions from the crop of the past season. We grew the past season for fruit, both in our seed grounds and in market garden, nearly 60,000 tomato plants, so that we may reasonably be supposed to have gathered some ideas as well as tomatoes. These 60,000 plants were 20,000 Canada Victor, 30,000 Trophy, 6,000 Richman's Early and nearly 4,000 Arlington.

The crop of fruit on the late-set plants was unusually light, owing to unfavorable weather. As to our experience with the varieties, we would state that if we were to plant 100,000 next season, *every plant*, both early and late, would be Canada Victor. Had our entire market planting of tomatoes this season been of this variety, we would have realized nearly a third more money than we did from the various sorts planted. We are loth to drop the Trophy as a market tomato, but the cash receipts are decidedly against it. It grows too large, ripens badly around the stem and bursts fearfully in bad weather, so that, although its product is large, it culls down badly.

Our Canada Victors this season hardly received culling at all, and, although we did not ship any until our crop of seed was saved, and the market was full of tomatoes, we received more for them at wholesale than ordinary Anne Arundel tomatoes were bringing in the retail market. This was on account of their uniform

smoothness and bright color. For a combination of good qualities we know of no superior tomato. The Arlington is a good solid tomato, but is too late, and its *freckled* appearance is against it. The Early Richman is early, bright-red and enormously productive, but is crooked and hollow. We shall abide the Victor until a better is found, which is doubtful. The Trophy we cannot quite abandon for family use—it makes such grand slices.

CABBAGE.—Among early vegetables the cabbage needs more improvement than any other. The Jersey Wakefield still maintains its character as a first-class early sort, with about forty inferior sorts mixed up with it. We have never seen a perfectly pure sample in all our experience. The Messrs. Landreth, of Philadelphia, claim to have so completely culled it out that they re-christen their sort *Early Bloomsbury*, and send it out this season in small lots. If the *Early Bloomsbury* combines the good qualities of the best specimens of the Early Wakefield it will be a valuable acquisition to market gardeners.

POTATOES.—In potatoes we can report nothing new except the bugs, *and a strong decoction of May-apple root will kill these as quickly and as certainly as Paris green*—just make a note of that. The Early Rose has done so well ever since we paid $3.00 for three potatoes, that we have not felt like buying the new sorts at fancy prices.—We planted this season two patches of Peerless in the same field; one was destroyed by the bugs, the other was not molested—neither patch had any general remedy applied. Why was this thus? As a second early or late Summer cabbage, we have never found any to surpass the sort known as *Fottler's Improved Brunswick*. It heads uniformly large and solid and is with us the most profitable cabbage to grow for market, as it comes in just after the early sorts are out of the way and cabbage is scarce.

FLOWERS.—In flowers there is not much in the way of new species to report. We have bloomed most of the novelties sent out by the English growers last Spring. The greatest novelty of the season is a pretty little *Lobelia Pumila*, with large double blue flowers, a compact and handsome little plant which will make a neat edging for beds that are moist and not too sunny. Among the new geraniums received last spring there are several striking sorts. *Richard Cœur de Lion* is a magnificent scarlet; the trusses are small, but the immense size of the florets and the abundance of the bloom make up all deficiencies in this respect. *Mrs. Blizzard* is perfectly unique, a very delicate rose color, spattered and dotted all over with bright carmine. *Lord Mayo* is a grand scarlet with white eye. *Horace Greeley* and *Mrs. E. Naish* are a curious shade of crimson, flushed with purple, very attractive. *White Clipper* is the best bedding white we have seen. Among the bronze or bi-colored geraniums we find the following stand the sun remarkably well: *Pride of Mt. Hope* (Ellwanger & Barry)—leaves golden yellow; bright narrow red zone; grows almost flat on the ground. Fine for ribbon beds. Of the English sorts *Mrs. H. Weir* is the best by far; a very rich yellow leaf with a very broad, deep red zone. *Dolly Varden* is a novelty in ivy-leafed geraniums; the foliage is very large, and of a bright golden tinge, with bronze zone; very free grower. But I am already transgressing on your space, and to describe all the new sorts of merit would tire your readers. You may rest assured that in bedding plants at least we have advanced as much as usual this season.

FRUITS.—In small fruits the Herstine Raspberry has fully held its own, and we place it at the head of the list for hardy sorts. It is early, of good flavor and enormously productive.

The season was a fine one for grapes, and most of the standard sorts have done well. *Ives* rotted badly with us. *Martha* grows well and ripens well, but is to our taste very poor. Among the grapes at our Horticultural Exhibition I was particularly struck with a plate of one of Arnold's Hybrids—*Brandt*,—shown by Mr. John Cook, of Baltimore Co. We have not yet fruited it here, but if I am not much mistaken it is the coming grape for this section. The bunches were remarkably compact, and the berries, though small, were larger than Delaware, and more of that peculiar "*winey*" character so prized by refined palates.

I intended to say "a heap more" about grapes and strawberries, but am afraid you will hardly print all this. So strawberries next.

W. F. MASSEY.

"*Riverbank*," *Chestertown, Md., Nov.* 10, 1874.

[We are always glad to print everything coming from Mr. Massey, who, our readers will agree, never speaks unless he says something, and that to the point.—*Ed. A. F.*]

Pear Culture.

To the Editors of the American Farmer:

In the last number (Nov.) of the *Farmer* there appears an article by Mr. E. P. Powell, from *Gardener's Monthly*, "on the essentials to the healthy growth and fruitage of the pear."

Your correspondent has given considerable attention to a pear orchard of a thousand trees for some years past, and for Southern soils and climate cannot quite agree with many of the "eleven essentials" here given. Without attempting an elaborate commentary and critique, I propose noticing these "essentials" in the order in which they occur:

1. "Well drained soil—the pear will not stand wet feet." This is true, and common to all fruit trees and small fruits, save the whortle and cranberries.

"Sunny slopes," advised as a location, are less desirable South than North; promoting early blossoming, which with us is as undesirable as *late* growth of wood.

2. "Let the trees be set in the natural soil when perfectly pliable, (typographic error, I suppose *friable*,) and *without manure*." Now this depends upon the fertility of the land; and if the trees are planted on poor soil without manure, failure to make *wood growth* will be certain. It is opposed to the experience of Downing, Quinn, Field, and every one who has grown a pear orchard.—Manuring on *well-drained land*, does not induce the peculiar luxuriant and late growth, inviting pear blight.

3. "Let them be at once mulched with litter, or, best of all, saw dust that has been used for bedding, and thus become enriched." The best *mulch*

for trees planted the *first year*, during the spring and early summer months, is a *frequently moved soil, kept porous* by cultivation, which stimulates the growth of a young tree as of any other plant. In *midsummer* or *a drouth*, mulching is often desirable.

"Never let the trees be without mulching." To follow this advice, with us the orchard would be apt to be killed outright by short-tailed rats, which would destroy the roots; and in lieu of "keeping their feet warm," in our climate we want often the radiation of an open porous soil to invite moisture.

4. "Never but very seldom plough; but annually, in the summer, fork about the tree in a circle from five to ten feet in diameter. Renew the mulch after the forking." The impression of the writer and his practice has been to cultivate well with plough, hoe, and cultivator, the young trees for the first three years after setting, as one would for corn or cotton. After considerable wood growth is made, and the trees well established, then one good *shallow* plowing in early spring, and use the grass blade three or four times during spring and summer on the tree rows, and if the land be in good heart, it *will* afford abundant *mulching* material.

"Do not fork deep, so as to disturb the roots, but clean out every grass root; pears will not bear choking. When the mulch is replaced, let it not quite touch the bark; make it two or three inches thick." These, in field culture, we do not consider "essential," but may be practiced in garden culture. The idea, that loose mulching material would be hurtful near or even touching the stem or trunk, is singular; and as for *choking* with such material a tree whose breathing is in leaves and circulating apparatus imbedded in hard wood,—reader, draw your own inference.

5. "In summer, cut out weak and misplaced growth, but never head back the strong shoots that are in proper position." Why not cut off these shoots when they first appear in positions not wanted?

6. "In November, after growth has ceased, head back the strong shoots that you carefully spared during summer. By this system of pruning, you in summer force all the strength into the strong limbs, and thus you cut away the *youngest of this wood* before winter." This advice *may* or *may not* be judicious, depending on *the ripened condition* of the wood. In certain seasons, mulching continued around the trees through summer into late fall, is apt to induce *the very condition of unripened tinder wood* we don't want, and *whose removal he recommends.*—Where the stout shoots on trees several years planted, are properly matured, we think Mr. Saunders, of the *Experimental Garden*, gives the best advice—to *let* the *trees alone* to form their fruit spurs and develop their buds. This continual cutting back, after the heads are well formed, promotes twiggy wood growth at the expense of fruit. We can't see the point he makes in saying, "the tree then stands with its feet warm, and its head hardened for the cold and dangerous weather; it is left as hardy as it can possibly be." This is something very much like sheep farmers call "coddling;" one *care* brings another and another.

7. Absurd; too much so for any sensible man to think of as regards "nostrums" and sunning the tree. "But on no account be content if the tree stands well into the season without growth." It is not common or expected for two-year old nursery trees to make much growth the first season, and imprudent to plant pear trees on *poor* or undrained soil.

8. "Give pears a plenty of ashes, and occasionally salt." Broad-cast the young pear orchard with three parts ashes, unleached, to one of bone flour, from four to six hundred pounds of the mixture per acre, and plant a *manured crop* of tobacco, cotton, sweet potatoes, or any low growing hoed crop; and in planting the crop, *always* consider the row of trees a row of the crops, treating it accordingly as to clean cultivation for the first three years after setting.

10. "Prevent young trees from bearing."—Dwarf, (and sometimes Standard,) Bartletts, frequently bear themselves to death. Beurre Clairgeau, Standard, has the same fault, bearing as early as the Bartlett. "Get growth first, and wood afterwards." True doctrine.

11. Very good advice about pruning, and each tree having its particular form and mode of growth.

The first and second prunings are the most important of all, and when properly done, and the natural head and form of the trees established, the best and most successful cultivators pay more attention to the soil than the form of their trees. NANSEMOND.

Exchange, Va., Nov. 2d, 1874.

Fruits in Tidewater Va.—Blight—Pears in Clover.

Mr. G. F. B. Leighton, the President of the Norfolk Horticultural and Pomological Society, has kindly furnished us with a copy of his report, made at its regular meeting on the 14th ult., and which, as containing some very useful information, will be read with much interest:

In reviewing the past fruit season we find some points worthy of our special notice. The unprecedented freeze on the morning of April 13th, sadly injured the fruits of Tidewater Virginia, causing in some instances an entire failure of the crop.

This misfortune, however, is mitigated in part by the extra growth of the trees. Yet, among the various kinds of pear trees, one variety, the Duchesse d'Angouleme, seems to have furnished an exception to this rule.

From the different neighborhoods, the report comes that this variety has made but little wood this season, and I would suggest that an inquiry into the cause is worthy of your investigation.

We can congratulate ourselves upon the freedom from the scourge of blight the past season among the pear trees. Should it make its appearance another season, I would advise that you promptly adopt the remedies best calculated to arrest the disease.

Some of you will recollect that in response to inquiries for information on this subject, the Commissioner of Agriculture recommended the use of carbolate of lime with sulphur added, say

one pound of sulphur to six or eight pounds of carbolate of lime reduced to the consistency of thick whitewash, and applied to the diseased parts, and where the bark is diseased, remove the outer portion before making the application.

I have used this with magical effect on blighted or diseased trees, but in the future I shall use the formula recommended by the Hon. William Saunders, of Washington, who has charge of the public grounds, as being more economical than the above, on account of the volatile nature of carbolic acid, to wit: To a half bushel of lime add four pounds of sulphur—slake to the consistency of whitewash; and when applied, add half an ounce of carbolic acid to each gallon of wash, and apply as above directed.

In answer to questions as to how I dissolve bones, I would remark that I have a large iron box into which I put layers of bones broken into fragments, ashes, &c., as follows: To 100 pounds of bone add 100 pounds of wood ashes, mixed with 25 pounds slaked lime and 12 pounds sal soda. When packed add 20 gallons of water. In from six to eight weeks the bones will be reduced to a pulp, when a sufficient quantity of dry earth should be added to absorb the ammonia.

Much has been written for and against the cultivation of clover among pear trees as a mulching. As the idea appeared feasible to me, I sowed seed among about nine hundred trees in the Spring of 1873. In May last the foliage looked rather sickly, in comparison with those by their side, where clean culture had been adopted, and the clean-culture trees held their superiority of appearance until July, when the trees among the clover advanced to equal appearance as those of clean culture. September gave the trees among the clover a decidedly better appearance than those of clean culture. October revealed the fact that the foliage remained two weeks longer on the trees among the clover than on those of clean culture.

While it will require more time with me to make a fair test as to the advantages of this method of cultivation, I am inclined to the belief that trees six years out can be safely and judiciously cultivated under the clover system inaugurated by Mr. Meehan, of Pennsylvania, if properly sustained by surface application of fruit food. While we have had a scanty crop of pears in this section, it is gratifying to know that the States north of us have been more favored—some sections even to an excessively large crop, resulting in low prices, thereby placing the pear on many a table for the first time, that otherwise would not have enjoyed it.

I may safely predict for the pear, a parallel of the strawberry history—at first, a luxury for the few, verging into a necessity for the multitude.

The progress of floriculture in our midst is most gratifying. It is taking deeper root with a class that has been too much inclined to consider the elevated employment and pleasure as an appendage of affluence only.

The taste for flowers like the taste for music is an almost unerring test of the general tone of society, and it is cheering to see in the windows of the laboring man these secret influences from nature's gems that tend to purer thoughts, being cared for. We may hope that this influence may prepare the future for a more universal enjoyment of these pleasures that lie at our feet, hourly greeting our vision. We may regard them as heavenly gem drops sprinkled in the pathway of man, to guide him to a nobler field of action, a compass that points to happiness for the rising generation.

Cultivating Sweet Potatoes.

To the Editors of the American Farmer:

Your correspondent's inquiry in reference to sweet potatoes running to vine, in lieu of forming roots, is not an uncommon occurrence with us in this county, which, from its former extensive culture of the old "yellow bark," has given its name to that variety.

The editor's explanation, that probably he had manured too high, would appear reasonable were it not that we have other facts annually occurring in our experience to show that even on land in good heart, where this crop *has been grown for several years in succession, the best results* of over one hundred barrels per acre are produced by using Baltimore stable manure to the value of $50 per acre, composted with an *equal bulk* of wood-mould in the drill. This manure costs with us one dollar thirty to fifty cents per cart-load of 20 bushels.

Our potato-growers, when the vines were unusually luxuriant, *formerly* turned in calves or cows to graze them; but the experiment was doubtful of utility. The value of ashes as a fertilizer for this (or indeed for almost any) crop I can testify to from experience. Thirty years ago, my father grew sweet potatoes in twenty or more acre patches for Northern markets, and used sloop loads of ashes for several years. His experience was, that the ashes were the cheapest and most enduring fertilizer for the potato crop he ever tried. The leached ashes were used broadcast, about 120 bushels per acre, and cost then 10 cents per bushel at the the Norfolk soap factory. The drills were filled with wood-mould composted with stable and farm-yard manure.

A friend of ours, the present season, sold nearly 1,100 barrels from ten acres; they were heavily manured with stable manure composted with wood mould. If the land be *well drained*, the writer would advise your correspondent L. to try sweet potatoes on the same land again, and use not only ashes broadcast, but manure in the drill, if the land be of a *physical character adapted to this crop*. Too much rain in July is said, or thought to be, one cause of excessive growth of vine. The potato now grown by us for Northern markets, is not the old "yellow bark," or Nansemond, but much like it in color without and within; in form it is shorter and more like the yams—it is called "red nose."

The yams, pumpkin yams, (red inside) Hicks and Hayman, (the two latter are white potatoes,) are only grown for family use and the home market. The Hayman keeps like a walnut in hills or cellar with little trouble, and grows to a very large size on moderately rich land *without manure*. While we do not consider it, or any kind grown, comparable to the yams or old Spanish for the table in winter, yet its hardiness, and growing on lands without manure, where

other kinds would only be slips or small potatoes, recommend it for home use.

The crop is only profitable with us when it matures early, so as to be marketed in September and early in October; and it is not uncommon to put sweet potatoes on the same land for several years in succession; and when the land has once *produced an unusually fine yield*, the impression is current that it will be *potato sick* the next year, and prudence dictates a change of location for several years. NANSEMOND.

Exchange, Va., Nov. 2d, 1874.

Training Grapes in the Vineyard.

Mr. T. H. Burgess, of Ulster co., N. Y., in a communication to the *Country Gentleman*, gives a method of training vines, his account of which we copy. He says this system has so far gained the good opinion of vineyardists in his section, that it has near superseded every other method of training. Its simplicity, cheapness of trellis, capability of being continued indefinitely, without retaining superfluous old wood, and its uni-

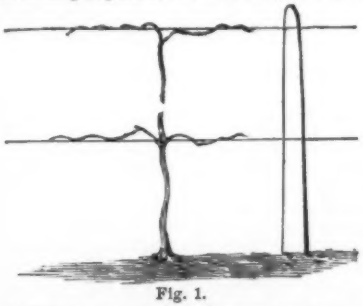


Fig. 1.

formly large crops of fine clusters, are its recommendations. The method is shown in figure 1, viz: Four short arms of new wood; the first pair on a wire about 3½ feet high, the upper pair about 6 feet high. The arms are from 12 to 20 inches long, having five to eight buds each; these are renewed annually from the best bearing wood of new growth, care being taken in summer pruning to preserve suitable canes for that purpose.

The new canes often start two from one bud, as at *a*, fig. 2, in which case the cane *d* is retained for next year's arm, and all the rest is cut off at *a*.

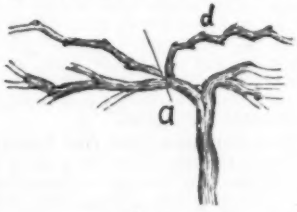


Fig. 2.

It is considered better not to allow the young cane intended for the new arm to bear any.

The next best arm is where the first new cane has a lateral close to its origin, a portion of which

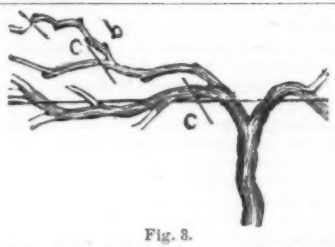


Fig. 3.

is used to form the new arm, as at *b*, fig. 3—the marks *c c*, showing where to cut at fall or winter pruning.

Short jointed, stocky, well-ripened wood is what is desired, and often, in order to secure arms, such means as shown at fig. 4 are necessary, viz., *a b* is a new arm, perhaps the only one suitable on the last year's arm, in which case

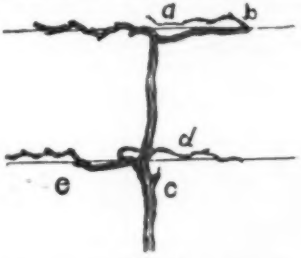


Fig. 4.

it is retained as shown; and if, on the arm at *c*, there should be no good young cane, it may be wholly removed, except one bud, or room for an *adventitious* bud to appear, forming bearing wood for the next arm, and both arms are secured from the old arm on the opposite side, as *e* and *d*.

This will indicate the usual fall pruning to prepare a vine for bearing.

Summer pruning consists in checking the too rampant growth of wood, by pinching at five to ten leaves beyond the last cluster, the object being to leave enough healthy foliage to ripen the fruit, and by checking the growth of wood at the length indicated, larger and more compact clusters are formed. Often more than one pruning is required, and the vineyard needs constant attention, to keep the growing canes straightened out along the wires, or turned off to hang down, as the case seems to require, keeping them from strangling the fruit.

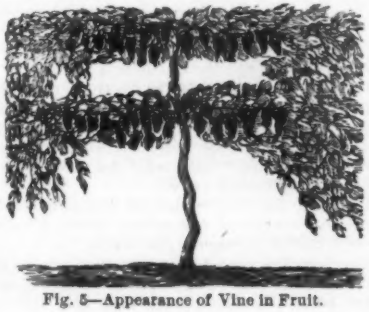


Fig. 5—Appearance of Vine in Fruit.

Thinning the fruit is also carefully attended to as soon as the clusters have developed their shape, before the grapes are half grown; and every imperfect cluster is removed (from all vines well loaded), so that *only fine clusters are grown*, as it never pays to grow culls.

If still too much fruit is left on any vine, a portion is removed, so as to leave only what will probably be well ripened, without injury to the vine. Many examine the clusters also, removing every imperfect grape, and sometimes thinning over-crowded clusters. All superfluous shoots are removed on first appearance. Thus, careful growers secure perfect clusters, ready for packing without trimming, and have very little of second quality grapes to ship. Often the rose beetle, or an early hail storm, or red spider, &c., will cause imperfect grapes to show early, which, if removed promptly, would allow clusters to fill up.

After the fifth year, Concord vines, on good ground, properly manured, bear 12 to 20 pounds to the vine, 100 vines often producing a ton of grapes, many clusters weighing a pound each, and the average price previous to 1874 has been 10 cents per pound.

Sometimes a slaty knoll will give an astonishing yield; sometimes rich spots produce rampant vines, but little fruit, and the contrary may occur also, all within the extent of a single acre. Our soil being composed of the decay of shaly rock and of drift, is somewhat peculiar. The rock is made of successive strata of shale, slate, and solid bluestone, in many places edged up, contorted, and crushed together by upheavals long ago, so that the roots of vines can penetrate in many places very deeply, and bring up hidden treasures. The writer has found grape-vine roots, four feet deep in slaty rock, when digging and blasting for a cistern.

Our wooded mountains, north and west, afford to many of the best vineyards a partial protection, and an elevation of 300 to 800 feet above the river may also be a benefit; the early frosts, and always the coldest temperature, being observed in the valleys. Southerly and easterly exposures prove generally best, although some of the very best vineyards are on protected westerly and northerly slopes, which have been well drained.

Vines are planted of late years for this method of training, 8 by 8 feet, 9 by 9 feet, or 9 by 10 feet—posts are set 24 to 30 feet apart. Wire No. 12 and 14, galvanized, for moderate lengths of trellis; Nos. 9 and 10 for very long rows. No varieties have succeeded uniformly, except Concord and Hartford Prolific; although on the high grounds about Clintondale, the Isabella has done well—failing, perhaps, one year in ten, on account of early frost.

We pack in shallow boxes holding 15 to 30 pounds. Some have the bottoms fastened with screws, so that they can be removed, and the box packed with the cover down. This gives a handsome appearance, but is not a general practice, or of any advantage, the main object being to send only fine clusters, neatly packed and shipped with care, the evening boats on the Hudson affording excellent facilities.

Some years the rose beetle has done damage. These are watched for and picked off, if they appear during the time of blossoming.

Horticulture in Maryland.

Mr. Meehan has been giving in the *Gardener's Monthly* his recollections of a visit to Baltimore, and as it will be interesting for our readers to know how strangers view our surroundings, we give his notes on some of the well-known places he visited:

Among the interesting features of Maryland, horticulturally considered, is the number of fine gardens which have remained in one family for many generations. In other places, where property continually changes, the plantings of one day are neglected the next; and grand old trees valued by the one for their historical associations, or for their intrinsic beauty or rarity, by the other are regarded only so far as the amount of cord wood they contain. One of these grand old gardens is that of Hampton, for several generations the home of the Ridgeleys. This is probably ten miles from Baltimore; but in company with Messrs. Brackenridge, Sands and Pentland, and through a country of the most beautiful character,—now driving through deep shaded lanes, under huge white and Spanish Oaks, or along streams bordered by white Fringe and other rare trees, or in turn passing over open ground with well tilled fields about one, and the grandest of ever changing scenery in the distance, the way seemed all too short. The estate comprises several thousand acres, which, in the olden time, was all farmed by the owner under overseers. Of course the difficulties that surround such a system now are insurmountable, and it will take time to regulate all these things. A horticulturist can only hope that that system may prove best for the whole country, which will lead to the preservation of gardens and grounds like these for many years to come. Most of the trees are of American species, some of them being magnificent specimens, and so old and majestic, they look as if they had never been young. The grounds are laid out with excellent taste, and have remained very much in their original condition, thus affording a good illustration of the prevailing taste of the last century. The most striking feature is the immense terraces, of which there are several in succession in front of the house. Each of these terraces is probably twenty feet below the other, the terrace banks being steep and grassed. The descent from one level to the other is not by the ordinary method of stairs or steps, but by an inclined plane neatly sodded, and kept nicely mown. Each terrace is probably between seventy-five and one hundred feet wide, and on these are flower beds and vases, the flower beds of course arranged in a harmonious geometrical plan, so as to represent an unity; and in these are flowers massed according to the modern plan—according to a tasteful arrangement of colors. Along the upper edge of the terrace bank is a walk, from which one looks on the flower picture of the terrace below. This indeed is the only way in which to show off to advantage the proper effects of harmonies of colors. When standing on a level with geometrical flower beds, much of the effect is lost. In our notes of gardening about Boston last fall, it was noted that much was made of silver sand to make a good contrast

with some of the brightest colored flowers. Here a very pure white marble, ground to dust, was used for a like purpose, and with excellent effect. On the grounds is the family burial ground, in which, in a neat and unpretentious vault, lie the remains of the members of the family for several generations past; some of them have been governors of the State, or held distinguished positions, in times when it was a distinguished honor to hold them. The walls of the enclosure are completely covered with the English Ivy, reviving many associations with the illustrious past. The surface of the little cemetery is completely carpeted, or at least densely clothed with a thick set growth of Vinca minor, or the lesser Periwinkle, "myrtle" as it is absurdly called by cemetery folks about Philadelphia, and we suppose elsewhere. Improvements that will not interfere with the historical recollections connected with the grounds are in contemplation, and if the long and intelligent experience of Mr. Brackenridge, whom we believe advises in the contemplated improvements, is availed of, there is no doubt but the vandalism, which too often marks gardening "progress," will be avoided. It gave us great pleasure to meet here as gardener Mr. Mark Taylor, with whom we had no previous acquaintance, but whose evident knowledge and skill in his profession will earn for him an enduring place in our regard.

Not a great distance from Hampton is the estate of W. T. Walters, Esq., where we found one of the old Philadelphia gardeners, Alexander Frazer, installed. Here was one of the best graperies we have seen for some time—best in this, that the leaves were large and of a deep green, the fruit as black as sloes, and not an insect or a trace of disease to be seen. Philadelphians are accustomed to see good grapes at their exhibitions, but few superior to these. Mr. Walters' house is pleasantly situated on the edge of a natural growth of timber, which forms an excellent summer shade, as well as a neat back ground to the dwelling. The front looks on a well-kept lawn, in which evergreens of about fifteen or twenty years old are tastefully planted. We do not know but at this time of their lives, evergreens may be said to be in their prime. Some of the best specimens of Juniperus oblonga pendula are here, and suggest to us to say that nothing can be more effective for filling up a narrow space between windows, or similar places near buildings, than this plant. A large and well-arranged pond is an especial feature of these gardens. The stream is carried along in a rather narrow course, but bayed out and inleted among trees and shrubs and arbors, so as to give it the idea of an immense extent. The grounds are rather large, but are so arranged as to be easily kept neat and in good order by a small working force,—a point that is too often forgotten in arranging a place.

Clifton Park, the country sent of the late Johns Hopkins, in the life of its owner, now a couple of years deceased, was one of the celebrated horticultural establishments in the country, and well kept up under the management of Mr William Fowler, who is another of those intelligent gardeners, whom it always delights an enthusiastic horticulturist to see. The property was donated by Mr. Hopkins for educational purposes, but whether or not it will be maintained in a creditable condition horticulturally, remains to be seen. The large lake, which was too large for the supply of water, and consequently stagnated some in dry seasons, is being filled up, which looks as if some one was acting judiciously. The place is now quite sacred in the hearts of those who love to see fine specimens of the rarer evergreens. Cunninghamia sinensis is one of the finest we ever saw,—probably over thirty feet high. It varies much from seed, and some of the specimens here consequently differ much from one another. There are some remarkably fine specimens of Picea Pinsapo, P. cephalonica, and others; and those who love beautiful trees, and beautiful specimens of beautiful trees, should not fail to pay Clifton a visit. The charm of the place, however, to our mind, is the Magnolia grandifloras, which everywhere abound on the grounds. To show how rapidly they grow to be blooming beauties, we may say that these grand specimens, some of them probably between twenty and thirty feet high, were all raised or planted quite young by Mr. Fowler since he has been there—about fifteen years, we believe. His secret is simply protection from wind. He plants other things about them as nurse trees, and the Magnolias besides are set rather thick. Now the Magnolias are able to take care of themselves, and now there are thick clumps of these frost-proof and wind-proof, and in a condition of luxuriance which we have not seen equalled in Virginia or Kentucky, and which throw out a delicious fragrance from the hundreds of flowers, for a long distance around. Rhododendrons are treated in the same way, and will delight any lover of this beautiful tribe of plants to see.

With a self-sacrifice we cannot too well appreciate, our three good friends, Sands, Brackenridge and Pentland, in their anxiety to show us as much as possible,—worthy of being seen, as they thought—left us little time to see the attractions of their own homes. The few minutes we spent at Mr. Pentland's greenhouses, however, showed by the extensive arrangements for cut flowers in winter, that he was the centre of a prosperous trade; and the public offices he has held, indicates how well he enjoys the esteem of his fellow-citizens; while at Mr. Brackenridge's, in addition to a beautiful stock of general nursery trees, there was an immense list of rare and curious things, which one might expect to find on the property of the assistant botanist of the Mexican Boundary Survey, and the discoverer of the curious pitcher plant, Darlingtonia Californica.

A Strong Squash.—President Clark, of the Amherst Agricultural College, corresponding with a friend, writes: "I have a squash in harness, to test its expansive power. It has already lifted 1,100 lbs., and is now under a pressure of 1,200 lbs., which I doubt not will be raised before morning. It has crowds of visitors, and the wisest among them stand in awe as they see how wonderfully the vital force controls the chemical and physical forces in its desperate efforts to accomplish its mission in building a squash."

Remember the subscription to the "Farmer" is only 25 a year and 10 cents postage, to clubs of five or more.

Floriculture, &c.—December, 1874.

By W. D. Brackenridge, Florist and Nurseryman, Govanstown, Baltimore county, Md.

Lawn and Pleasure Grounds.

The beauty of a tree does not always consist in the splendor of its flowers, or in the form and tint of its foliage, but in many instances it is the bold outline of the whole individual, which captivates the eye of the beholder,—and when we talk in this way we have in our mind's eye some fine specimens of the *American Beech*, whose low, straight, smooth trunks, with gray bark and broad heads of horizontal branches, terminate with light sprays; such trees, either in summer or winter, are desirable subjects with which to grace a lawn. They succeed best where the ground is not over retentive of moisture.

As a fit companion to the *Beech*, we would select the *American Hop-Hornbeam*, *Ostrya Virginica*—a tree 50 to 60 feet high; of erect, sturdy growth, and, like the Beech, retaining its foliage far into the winter months. A good contrast to the two last, are trees possessing much beauty of outline, having either a yellow or a white bark, which peels in thin horizontal sheets, with towering heads, producing in an adult state pendant branches, bearing leaves of an agreeable fragrance. We here allude to our *White* and *Canoe Birches*. We have also the *Sweet* or *Cherry Birch*, which attains to a much larger size, but whose bark does not peel so readily from the trunk. There are yet several other kinds of Birches, all of which prefer a soil that is moist, and abounding in vegetable matter.

Among trees of a towering character, a notable one is the *Angular Stemmed Poplar—Populus Monilifera*, and, as a fast-growing tree, we know of nothing to surpass it; and when planted near to a suburban residence, particularly if that be of the "mansard" type, it has the effect of relieving it very much, and has not the bad manners to send up suckers all over the lawn and flower beds; the catkins or cotton which they throw off in early spring is the greatest objection which clings to them. If any one has a moist piece of land, which they want to plant with another graceful, fast-growing tree, they should choose the Shingle Cypress—*Taxodium distichum*, whose foliage in summer has an ostrich feather airiness about it, and in winter its straight trunk and symmetrical head pointing to the skies, reminding one of a better state of things than exists here below. A peculiarity in these trees, is, in an adult state, its sending up round hubs from the roots above the ground, about the size of a child's head; it is difficult to understand for what purpose the God of nature designed these!

To protect newly-planted or tender trees and plants from the cold of winter, it is not necessary, as we often see done, to wrap them up close in straw or mats; it is shade that is wanted so as to prevent evaporation from alternate thawing and freezing; such as are low and near the ground can be protected by oak leaves, using a few short evergreen branches to keep the leaves in their place; taller plants can be covered by branches of pines or cedar stuck all around, then tied together at the top, after which shake in some leaves around the base of the plant; a barrel, by taking both ends out and placing it around the object, with a few leaves sprinkled inside, answers the purpose sometimes very well. To protect strawberry and other herbaceous plants from being killed, or drawn out of the ground, use stable manure. In defending our young evergreens, we use leaves and sawdust exclusively.

With regard to the management of plants in cold frames, we advise that water should be given very sparingly, allowing a free admission of air at all times, when mild weather prevails.

GREENHOUSE.

A few plants of free-blooming *roses*, as *Isabella Sprunt*, *Hermosa*, *Bon Silene*, *Tea Adam*, *Safrano*, and *Louise Philippe*, ought to be kept in a warm part of the house, so as to have a few buds about the holiday times. Keep the *Cinerarias* in a growing condition, by shifting them before they become pot-bound,—and pursue the same course with young *Calceolarias*. Both require to be kept near the glass, in a cool part of the house; examine them frequently to see that the red spider does not attack them—a cure for which is a good application of sulphur and water. Remember to give the *Camellia* plants a partial shading; while the *Azaleas* will stand all the sun they can get during the winter with impunity. Let the atmosphere of the house be made humid by sprinkling of the floors and syringing the plants overhead in clear weather,—but this should never be done when the temperature is below 50°, and at no time should it be allowed to fall below 40°, as at a few degrees below that "Jack Frost" will call in to see how all feels—and this same Jack is a bad helpmate in greenhouse management. One of the most important matters in winter work, when growing plants, is to have a good stock of various kinds of earth in bins, under cover, as no plant will succeed if potted in wet earth.

Another important truth in plant culture is, that plants, if saturated with water when in a dormant state, will, after they begin to grow, exhibit a surfeited, sickly condition. And let me say here that it requires more knowledge to know when to give water, and when to withhold it, than any other branch or item of duty belonging to the profession. W. D. B.

Abutilon Boule de Niege.—This is what Dr. Thurber says of this recent introduction:

"Last spring we received from Mr. John Saul, of Washington, D. C., a quite new Abutilon, under the name of *Boule de Niege*—or "snow-ball, which, as its name would imply, originated in France, and the shape of its leaves indicates that it is from a species quite unlike *Thompsoni*, *Striatum* and their hybrids. The flowers are pure white, and of good form. The little plant sent us grew rapidly and flowered very freely, and should it retain these qualities when taken indoors, it will prove a very valuable winter bloomer. White flowers of the size of this are in great demand by the boquet makers, and this Abutilon will no doubt be found profitable to those who grow cut flowers for sale. It blooms when quite small; plants from cuttings flowered with us when only a few inches high."

Aquaculture.

By ALEX. KENT, Green Spring Fish Ponds, Green Spring Station, Baltimore county, Md.

Shad and Fancy Fishes, &c.

Messrs. Editors American Farmer:

Permit me to thank your correspondent "Potomac" for the valuable information contained in his November communication respecting the fishing interests of our State. It is, undoubtedly, of the first importance to the people, irrespective of occupation, that the decline of this interest be speedily checked, and that it be restored to its former value; and we quite agree with your correspondent when he claims for the shad and herring interests of our State the first place in the thoughts and efforts of its Commissioners. Still we are not quite prepared to believe that the people of the State will endorse his expressed views in regard to the salmon and bass. You have sufficiently explained, in your editorial remarks, the position in which the meagreness of our appropriation placed the commissioners in relation to our principal food fishes. I will not undertake to say that they have done the best possible with the funds placed at their disposal, but, without at all putting myself forward as the champion of their cause, I will say, with all due respect for your correspondent, that in ranking the salmon with fancy fish, he seems to "have very inadequate ideas of the extent" and value of these fisheries in some portions of our country. The Columbia river alone yielded last year $4,000,000 worth of salmon, an *amount* of fish food by no means inconsiderable, and of a *quality* surpassing the vaunted and excellent shad. You will observe that this sum only falls $1,000,000 short of the estimate which "Potomac" places upon the entire interest of the State—when it shall be properly developed. Without claiming for any or all of our rivers the possibility of any such yield as the above, we submit that this record entitles the salmon to a prominent place among the food fishes of our country. But our main object in this letter was not to defend the action of the commissioners. We wish first to set your correspondent right in regard to the brief article in your October number, which he designates "a feeler in favor of the salmon." It was not our intention in writing that article to play any such part as he intimates. Our only object was to give your readers such facts as we thought would interest them. The salmon spawn we referred to have been received, hatched, and are nearly ready for distribution; and we have the authority of the commissioners for saying that a large share of them are to be placed in the Potomac and its tributaries. We hope that "Lower Maryland"—even under these aggravating circumstances—will control herself, and not compromise her character by doing anything undignified or naughty. And now, having defined our position in regard to the shad, herring, and salmon, we come to the main purpose of this letter.

We want to say a few words to your readers in regard to what our friend calls fancy fish. We may fairly assume, we think, that whatever interests the people in the general subject of fish culture, and affords practical demonstration of what may be done, even on a small scale, will tend to develop the public sentiment that must precede and accompany anything like a general support of the laws regulating and protecting our fisheries. In what States, I would ask, has most been done to increase and protect our principal food-fishes? Unquestionably in those where there has been the most general interest manifested in the fancy or game fishes. The general acquaintance with the nature and methods of fish culture which naturally results from the introduction of these fishes into the interior portions of a State, secures for the more important fishes that intelligent protection without which all the labors of commissioners would be unavailing.

Besides, some of these fancy fish have a direct value to the agricultural element of the State, not possessed even by the shad. Almost every farmer has springs rising on, or streams running through, his land, that might, with slight outlay, be made the sources of considerable income.

The construction of ponds necessary for raising such fish, in reasonable numbers, would be a matter of merely nominal expense, and would yield the very largest profits. Aquaculture, not less than agriculture, should receive the attention of the farmer. Water, not less than land, should be made to yield rich and abundant harvests. In Europe, even where the land yields the largest returns, the cultivation of water is considered the more profitable of the two; and in this country it is claimed by our most prominent fish culturists that one acre of water is worth two of land. Our farmers do not all live along shore, and though they may share indirectly in the increased yield of our shad fisheries, this will not enable them to have fresh fish on their tables. If they would have these when they want them, they must utilize their streams and springs, turn their swamps and bogs into ponds, and stock them with the best fish that the water will raise. In the next issue I will endeavor to prove that this is practicable, by showing that it has already been done with the very best results.

Our commissioner, T. B. Ferguson, lately visited a terrapin farm in N. J., of which he gives an interesting and detailed account in the Baltimore papers of November 17th and 18th. In his opinion, it is entirely practicable for farmers favorably situated "to add terrapin raising to the other resources of their farms."

The United States Fish Commission, at their camp on the McCloud river, Cal., report, as the result of their work for the season, 5,752,500 salmon spawn. 4,150,000 of these have been distributed among 20 different States—Maryland's order being among the largest. 850,000 were reserved for the McCloud river, leaving a comparatively small percentage of loss.

☞ Seth Green, Rochester, N. Y., gives notice that any parties in the United States wishing to experiment in hatching the spawn of salmon trout, or white fish, will be sent a few hundred on addressing him as above and inclosing 50 cents to pay for the package.

MR. W. D. BRACKENRIDGE.—Our friend Meehan, in his notes of things around Baltimore, falls into a slight error concerning this gentleman, which it is worth while, we think, to correct. Mr. B. was "Horticulturist and Assistant Botanist" to the South Sea Exploring Expedition under Captain Wilkes, and the author of the fifteenth volume of the report of that expedition, which includes the family of Filices, &c. His only connection with the Mexican Boundary Survey was to arrange the specimens brought home by Captain Grim.

This mention of Mr. Brackenridge gives us the opportunity here of making anew our acknowledgments of the services rendered by him in his department of the *Farmer*. It is not going too far to say that his monthly papers, for practical usefulness—presented in an attractive style and polished language—are seldom surpassed. As an accomplished horticulturist, his works everywhere bear him witness, while, as a botanist, in the language to us of a gentleman himself of no mean repute in that science, "Mr. Brackenridge stands head and shoulders above us all in Maryland."

A NEW FLOUR.—A new flour is making its appearance in Eastern markets, made away in the interior of Minnesota by what is styled the "new process for purifying middlings," a process thus far kept secret. This flour is heavily bodied, and of such consistency that when thrown into the air it does not fly off in particles, but descends into the hand in a mass. It requires one-third more water in mixing than in ordinary flour, and in kneading into dough more labor is required. The bread, it is claimed, will remain fresh for a long time. The yield to the bushel of grain is not known. It is claimed that by the "new purifying process" it has been found in Minnesota that spring wheat can be made into the highest priced flour, and that the same can be done with the other kinds of wheat. There are now about twenty mills in Minnesota in which the new machinery has been introduced.

Preservation of Green Fodder.

In our French letters, allusion has been made to the preservation of green fodder, in covered trenches, and the process is described in that published on page 331 of our Nov. No.; in connexion with which we call attention to the following extract from another of our correspondent's letters, just come to hand:

"French agriculturists accept as a success the preservation of green fodder in trenches, such as maize, rye, &c., for winter and spring use, and that maize is first among the plants suited for such preservation. M. Moreul cultivates maize six years on the same soil, applying about thirty tons of farm-yard manure per acre, tilling to the depth of nine inches, and sowing in rows twelve inches apart. The average yield is about 40 tons of green maize per acre, and as much as 70 have been elsewhere cut; he allows the soiling to half-dry, an affair of climate, before carting it to the trench, and that yields about 55 cubic yards of preserve, of which the cattle receive, from 1st December to 1st April, 44 lbs. daily, with 22 lbs. of cabbages and 6 lbs. of hay; in the first fortnight of April, when green rye comes in, only half the feed of the 'preserve' is given, and so on till July. Either half-dried or green, maize keeps equally well. The grand object is to pile the mass closely together; some make the loaded carts pass along the trench when the heap commences to rise above the surface; this pressing of the maize is the secret of the process. In any case the maize must be chopped before being given to the cattle; the operation is slow if this be done in its green state, when it mixes best also with about 12 per cent. of cut straw, hay or the husks of many seeds. Beet pulp is similarly preserved with the same per centage of wheaten chaff or colza pods."

A GOOD HINT.—The past season was one of unusual drought, and those who had not prepared their land in such a way as to overcome the difficulty which cut short the crops of so many of the farmers, have suffered severely in consequence. A young Mississippian, who knew that he had to depend on his own unaided efforts for a crop of cotton, put the question to himself:

"I have to do all the work myself; how shall I accomplish the best results with the least expenditure of money and muscle?" Upon mature reflection, and in answer to his own questions, he arrived at the following conclusion:

1. Manure thoroughly and cultivate a small surface of land.
2. Prepare the land well by plowing and subsoiling deeply, and carefully plant the seed.
3. To cultivate shallow after the first working, keeping the ground always clean and the surface well pulverized.

The result of his good judgment and skill was *one bale and a half* to the acre of land, instead of making the same amount on twelve or fifteen acres. Under management like this, farming will pay in Mississippi, and pay better than nearly any other business.

Any young man of common industry and energy, can by the use of "brains" in his management, do as well, and soon be independent and self-sustaining—a producer instead of a consumer."

THE DORCHESTER CO. (MD.) AGRICULTURAL FAIR was held on the 5th and 6th ult., and was very successful—the display of live stock being especially good. The attendance was large, and great interest was manifested not only by the farmers, but by the ladies, who exhibited a large variety of articles of their handiwork.

CUTTING WHEAT BY STEAM.—Lord Kinnaird, a large and enterprising farmer of Scotland, writes to Mr. Mechi that he has had a most successful and satisfactory trial of reaping by steam power. He attached his traction engine to an enlarged reaping machine, and though the ground was soft, owing to wet weather, and the crop laid and leveled so that it could only be cut one way, yet he has no doubt that in ordinary dry harvest weather an acre could be cut down within half an hour, and he confidently expects to be able not only to cut, but, by the aid of steam power, to bind up the cut grain in sheaves, and thus gather in the crops,—employing only some half-dozen hands. The traction engine can carry to the stack-yard from ten to twenty cart-loads at one trip, and a youth of fifteen can drive it.

PRESERVATION OF MANURE.—Investigations have been made by Professor Way, of England, by which the increased value of manure kept under shelter is accurately determined as against that exposed in open yards. The following are the relative values as determined by analyses of the dry manures, the water being nearly equal in each, and about 71 per cent:

	Covered Manure.	*Yard Manure.*
Nitrogen, equal to ammonia, per cent.	2.87	1.7
Organic matter, soluble in water	6.42	1.82
Phosphoric acid	.30	.26
Alkalies	2.00	.80

The other constituents, not being of importance, were not determined. The value of the covered manure is seen to be more than double that of the other.

FLY IN WHEAT.—From many quarters we hear great complaints of the fly. The following, from the *Southern Planter*, is worthy of attention. The suggestion is identical with that given in a communication to the *American Farmer*, and published on page 363 of last volume; and there can now be, we suppose, no objection to stating that the source of both is Frank G. Ruffin, Esq., one of the most distinguished agriculturists of Virginia:

"It is a fact, tested by experiments off and on for more than thirty years, not numerously, but sufficiently and satisfactorily made, that one or two—not more—bushels of lime, sowed over the wheat when the fly makes its appearance, will destroy them. The like quantity, repeated in the spring, utterly destroys them.—That much lime cannot cost any one much; not more than from 20 cents to 40 cents per acre. The fly often costs us $10 per acre, interest about 2,000 per cent., which beats that form of extortion politely called banking all to pieces. And then on most soils the lime is an indispensable benefit greater than its cost. Will gas-house lime answer as well? Can't say; suppose you try it."

Eastern Shore of Virginia.

This is the way they manage things down in Accomac. Intending immigrants will please take notice and shun the regions of grasshoppers and arctic cold. We copy from the Onancock *Virginian*:—

Mr. Julius D. Beloate, from a lot of land of about 4 acres, for which he paid a rental this year of $30, and with the expenditure of $72 for guano and seed potatoes, realized in trucks of different kinds—round potatoes, sweet potatoes, cabbages, turnips, &c.,—$700. How is this for Accomac farming?

Many of our enterprising farmers have made two crops of the finest quality of round potatoes from the same seed and from the same ground this season. Mr. T. A. T. Jones, one of this class, planted in the spring Early Rose potatoes, which he shipped to market in June and July. He immediately got the same ground in order, and after letting the small potatoes remain in the sun until they began to assume a green appearance, seeded them again. He is now digging the second crop, and we have never seen finer potatoes for winter use.

AMERICAN COTTON AND TOBACCO CULTIVATORS WANTED IN THE ISLAND OF CORSICA.—The Department, remarks the last Agricultural Report, a few years ago embraced an opportunity of sending some Maryland and Virginia tobacco seed to Madame de Angeli, of the Island of Corsica, in the Mediterranean, for experimental culture. From the letter below, from the agent of Madame de Angeli, it will be seen that the experiment has proved so successful as to lead a prominent planter of the Island to offer liberal inducements for persons in this country, who may be competent to the undertaking, to go to the island and engage in the cultivation of both cotton and tobacco, for which the climate and soil of the country are believed to be peculiarly adapted. PHILADELPHIA, *September* 28, 1874. DEAR SIR:—I am requested to inform you that the seeds of Virginia and Maryland tobacco, which your Department sent to Madame de Angeli, some four years ago, for planting in Corsica, have produced most gratifying results. The seeds were sown upon the estate of M. Jean de Peraldi, Baron de Comnene, and in the district of Vico, lying near the sea. From March to June two crops or cuts were obtained, and the third crop was well up, but did not come to perfection. Potatoes and beans were afterwards planted on the tobacco fields, and produced an excellent crop. The Corsicans, however, do not understand well the art of dressing the tobacco produced. Cotton does not seem to have proved so great a success; probably because the cultivation was not well understood. In order, however, to stimulate the cultivation of both cotton and tobacco, Baron Peraldi authorizes me to inform your Department that he would willingly give a small tract of land on his estates in and around Vico to any Americans who, understanding the management of these products, would go out to Corsica and settle, he, of course, being prepared to provide for them until such time as they could, by means of their own

industry in raising these staples, provide for themselves. Very respectfully, CHARLES H. A. ESLING, Agent for the De Angeli Estates, 208 South Fourth Street, Philadelphia, Pa.

THE TOBACCO TRADE OF VIRGINIA.—The Tobacco Circular of Messrs. Palmer, Hartsook & Co., of Richmond, for October, 1874, furnishes the following comparative statement of the inspections of tobacco (in hogsheads) in Virginia during the past three "Tobacco Years" ending September 10th:

	1871-'72	1872-'73	1873-'74
Richmond	26,173	43,051	41,817
Petersburg	11,302	13,900	11,591
Lynchburg	5,251	7,098	5,890
Farmville	68	58	50
Total	52,794	63,107	62,348

THE MARYLAND HORTICULTURAL SOCIETY.—The monthly meetings for October and November were from some reason omitted, but we understand the Executive Committee, as re-organized at the recent election, have taken hold of the management with the determination to make the Society a useful and working one. A plan of discussions of popular subjects, and of those which ought to be popular, with the reading of papers by gentlemen of experience in the several departments of horticulture, is one of the features resolved upon, we believe, as a means of increasing the interest of our people in the objects of the society. This is just what we need here. In the place of didactic formal essays, we want to hear practical, workmanlike words from such men as Pentland, Feast, Snow, Brackenridge, Massey, and others, who can show us how to take hold of things and do them with our own hands.

SWAMP MUCK.—An inquirer of the *Canada Farmer* having asked the effect of applying this substance alone to land, the editor gives the following as his estimate of its value:

"Ordinary swamp muck is largely composed of decayed vegetable matter, and in its dry and pulverized state it is almost identical with the leaf mould so highly prized by horticulturists. Its absorbing qualities, when dry, are very great,—hence its value in the manure heap; whilst its direct fertilizing action, even when used alone and in its natural state, has, by repeated experiments, been placed beyond all doubt. One of the finest crops of wheat and the best crop of onions we ever witnessed was the result of exactly such an application as that described by our correspondent, and we have no hesitation whatever in advising such of the readers of the *Farmer* as have this really valuable article on their farms to 'go and do likewise.'"

REPORT OF THE DEPARTMENT OF AGRICULTURE FOR 1873.—We have received from the commissioner a copy of this, which contains a good deal of valuable matter, which would have been more serviceable, perhaps, if issued earlier—a fault, however, for which the department does not hold itself accountable. We have no space for a detailed notice, but may draw upon some of its articles hereafter.

The Fireside.

[*For the American Farmer.*]

The Training of the Young.

Man is a strangely endowed and one of the most singularly constituted beings in the creative range of God's moral government. He is a mystery even to himself. He is full of paradoxes. Emanating from the hands of a Workman perfect in Himself, he was pronounced, as he passed in review before Him, "essentially good." And yet in his lapsed, his carnal state, he is ever at enmity with his Maker—"is not subject to His laws, neither indeed can be."

His defection ulcerated his whole moral nature, so much so that it evoked a specific remedy—a new and most powerful expedient—to restore him to Divine favor.

He is the creature of Heaven's most terrible denunciations, as well as most gracious favor and message. Seen through the eye-glass of human senses, he is a creature of the vilest nature, as well as of God-like emotions. A good man is the best thing we shall ever see this side the grave; a wicked one, the worst this side of *hades*. His being a free moral agent, renders him peculiarly an object of interest to three worlds or places of residence—heaven, earth, and hell. In heaven, angelic shouts resound through all its vast expanse over every returning prodigal to the throne of God. On earth, it is the source of our weak hosannahs and intense moral solicitude. In hell, a fiendish smile of hate.

In man's probate state, from infancy to old age, he is ever in constant warfare with himself—with two sets of emotions, the things he would do, and those he would not. The grace of God in concert with his free choice—the balance-wheel to all His mysterious movements. He is ever progressive, either in vice or virtue. Like all the creation of his workmanship, there is never any point in his history that admits of poise; he is the moval machinery of perpetual motion. The saddest part of his history is, that so few of his race, proportionately, are progressing in the right direction. The bending heavens invite him hither, while his carnal nature gravitates earthward; hence, he is ever in fearful equipoise between good and evil, heaven and hell. The Spirit works within him in groans that cannot be uttered, whilst satanic devices are at work with most seductive flattery. Hence, with all these facts in full view, how essentially necessary is the early right culture of the young and plastic natures of those under charge of maturer heads, and how fearful the heritage of the delinquent exemplars and teachers in their line of duty.

"Train up a child in the way he should go, and when he is old he will not depart from it," is one of the most truthful and useful lessons donated to us by the wisest of our race.

Moral symmetry is the product of early, incessant, judicious pruning. As in our youthful physical natures wounds heal more readily, so in our moral natures our leprosies yield more readily to proper treatment, and through life does the parallel continue intensified through progression. The child's physical, emotional, religious or moral nature, should be exercised in view of harmonious

concert of action, to the end that he may be a perfect structure—"entire, wanting nothing."

Modern educators lose sight of the fact, in a great measure, that a healthy state of mind and soul are almost necessary attendants upon a sound body—an existing correlation. Every part of man's nature has a strong sympathy and attendant affinity; in his physical, one member of his body suffering, is telegraphed to and reciprocated by its most remote counterpart. Affect his moral nature, and his physical is called in play through the emotions in shouts of joy or groans of pain.

So, in conclusion, "the proper study of mankind is man," and the proper training of mankind (*i. e.*, humanly speaking,) is in an early start, persistent effort, judicious care, and a happy reference to all the elements which are so strangely mixed in him, that his maturity may embody a perfect organism—a corner-stone polished after the similitude of a palace.

JNO. D. THORNE.

Halifax Co., N. C., Nov. 3d, 1874.

Fragrant Memories of Travel—No. 3.

FROM THE CAVERNS OF EARTH.

BY JANE BOSWELL MOORE.

That branch of the Baltimore and Ohio which now extends from Harper's Ferry, through the beautiful valley of the Shenandoah, to Staunton, has placed within easy reach three of our country's great natural wonders—Weyer's and Fountain Caves and the Natural Bridge. We pass, some distance this side of Staunton, Weyer's Cave Station, from which an easy ride of four miles by stage brings us close to the caves. Some uncertainty, however, as to the stage, at this season of the year, made us prefer staying all night in Harrisonburg, where a night's rest in the newly-opened Spottswood House, (kept by the former proprietor of the hotel of that name which was burnt in Richmond,) for the accommodation of tourists and visitors to Raleigh and the many springs in the neighborhood, prepared us for next day's wonder and fatigue. At five o'clock next morning we left our most comfortable quarters for a carriage ride of fourteen miles, through pleasant landscapes of varied mountain and river scenery, to a white house standing near the road, on the porch of which some large stalectites and a sign—Fountain Cave House—told that we were nearing the acccomplishment of our wishes. Curiosity was at its height; we waited not for dinner, but hastily lunched on the piazza, overwhelming our host, meanwhile, with all manner of questions: as to our route, the interior of the cave, extent, etc. But a short distance from the house we began to go up a mountain path, a river or stream of water winding at our feet. At the top of this path a door conceals and closes the entrance to the cavern. But I pause, here, in my hurried imperfect description, for what mysteries and revelations lie behind that door; what new ideas of God and His marvelous works!

I have been in many places of peril,—having ventured a good distance "behind the sheet" in the Falls of Niagara; travelled two miles up the gorge at Trenton Falls, in icy weather; explored the famous Watkins Glen; gone down the steps and looked up at the snowy veil of Montmorenci; through the rapids of Lachine; tossed, during a seven-weeks crossing of the Atlantic, by a succession of storms, in one of which the San Francisco went down; up the marvellous railway of Mount Washington; in pestilential swamps and crowded fever hospitals; under booming guns and shells, fortunately for me, not exploding; but I must own that my feelings at the mouth of the cave before venturing down into the darkness, were different from all I had ever experienced. We can face danger, if we see it and know what it is,—it is the pall of impenetrable mystery and blackness from which we shrink.

"Silence and darkness, solemn sisters, twins,"

reign here. I do not say I was afraid, (let none accuse me of having thus committed myself,) but I thought ruefully of my extreme nearsightedness, and the possibility of pitching headlong into some fathomless abyss, of whose very existence I would be ignorant, until I tested its depth in person, and recalled the solemn look of a colored waiter, warming himself before the glowing, comfortable Hutchinson range at the hotel, (while we encountered cool morning air without,) and his expression of horror at the bare idea of entering such a place. At that moment I noticed the abject terror visible in every limb and on every feature of Aunt Lucy. She looked, in fact, as she sat waiting for Mr. Pirkey to light candles, like a palsied heap of terror. "It's an awful place," was the only remark she could offer. "Only because it is dark," was my solace. "Wait until it is lighted. Think how many thousands have gone through it, five hundred at a time, in perfect safety, no accident having happened." Let me say to every visitor who may have this feeling, that it leaves you directly. Not only so, but the massiveness of everything in the cave, impresses you with a sense of security. And let no one imagine that a day will do for the cavern, or that he will be satisfied by any such survey. I had made my arrangements to this effect, and having in prospect several extended trips before Christmas, among them one over the route of the Chesapeake and Ohio Railroad from Richmond to Cincinnati, through its many wonderful "cuts" and tunnels; the wild Pass of Goshen; the White Sulphur; Hawk's Nest; and many places famed for picturesque beauty and unsurpassed grandeur,—with these before me, stayed one day at the cave. I did so, because nothing I had ever read or heard, prepared me for the beauty of the cavern. Like all great objects in nature and art, one or two visits will not satisfy you. You may enter timorously, you leave far more eager to explore than at first, regarding it as a greater wonder than Niagara, well-fitted to fill the soul with the majesty and eternity of its great architect. Here in silence and darkness for ages, without sound or stroke of hammer or chisel, a temple of stone has been wrought, a cathedral aisle imprisoned in the bowels of the mountain. Of man's work or invention, there is, indeed, "nothing new under the sun"—the beauty of Gothic architecture is here, of choir, aisle and nave. Even an organ meets you, sending forth metallic musical sounds when struck. You see in this cavern, with its mighty stone work, traces of what, to God, is but

a fragment of time, somewhat as if a single drop were taken from the ocean and set in a ring, frozen clear as crystal, that it might be seen. How can I speak of that long gallery in rock, the Hall of Statuary; stalactite thrones, organs, sounding boards, figures, brackets of exquisite pattern, toilet stands, snowy, marble topped; flower gardens; cascades, whose snowy foam has been arrested in its fall, turning to stone that it might be ever before you; the great leaning tower of Pisa; the crypt or tomb in the catacombs; with scores of other objects wrought in stalactite from the roof, or stalagmite from the floor; every variety of graceful drapery; Senate chamber and Petsa, city of rock, beyond which are three square basins, smoothly cut in stone, into which clear spring water gushes, giving to the cavern its name. Unexplored chambers lie beyond; the thickness of the formations is hundreds of feet; yet in several years the accumulation on a tumbler set under a dripping rock, is hardly thicker than paper. How many ages, then, have these tiny drops been at work? The Psalmist answers, "*For a thousand years, in Thy sight, are but as yesterday, when it is past, and as a watch in the night.*"

My Neighbor and I.—No. 3.

BY JANE BOSWELL MOORE.

Mrs. Rand's sitting-room had an indescribably comfortable, home-like look, as I ran in the other evening, for a friendly talk. From every side and corner a gem in the way of an engraving or picture looked on you from the wall, while on a corner bracket, the Rogers' statuette of The Country Postoffice was placed; the stalwart form of the village shoemaker bent over his open mail-bag, from which he has drawn a letter for the young woman at his side, who has come to ask for it. The eager expectation, the hungry, wistful look in her eyes and mouth, tell an eloquent story, and she can hardly brook the delay, while the old man curiously peers at the direction, with his spectacles, as if she would care for any letter save her own. One of the many pictures of suspense and weary waiting, caused by the war.

The pages of the December *Galaxy* were open at "Leah, a Woman of Fashion,"—a mutual admiration for Mrs. Edwards' power of character drawing, being one of many bonds between us. "I really enjoyed myself last night," said Mrs. R. "George and I went to the Institute. Whom should we see there, but Caroline Holmes, who went West after her marriage nine years ago,—nine years! who would have thought it was so long? Yet she is here with three children depending on her for support, for her husband is dead, and left them hardly anything." "He had a good salary, and was doing well." "Is any man safe while the demon of drink meets him on every street? Caroline, however, looks better than I expected. I dare say some anxieties were buried in her husband's grave. She was always cheerful, and we examined some of the curious and useful things in the fair, recalling old times. Did you notice the Bartholow Filter, near one of the windows? It is an improved patent, and the water that was filtered through the asbestos in it, was not only colder, but indescribably clear, sparkling like crystal. It looked like the spring water we used to have at home. We were amused at a splendidly dressed woman, who took a glass of it, saying, with great emphasis, she never pretended to use hydrant water in washing clothes. It ruined their color—there was so much mud in it. She strained it for that. But as for drinking, it did well enough. How useless it seems to try and teach some people." "She had white garments at any rate," I said, laughing. "And perfumed ones, too, I imagine; for I saw her again at the Drexel cologne fountain, with an exquisitely embroidered wee bit of a handkerchief, that looked like a floating fragment of snow." "That fountain was delightful to many a damsel. My Bridget enjoyed it greatly, though I am afraid a poorer article would have been equally admired. To me, the most beautiful things in the Hall, were the inlaid table of Mr. Kurth's, and the large case of Sevrie's china from Seth Hopkins'. If I were rich enough I should be tempted to buy myself such a table this Christmas, only smaller, and fill my china closet with Sevrie's. Charles Lamb's essay on "old china" is to me delightful. And Jane Eyre speaks of a beautiful painted plate on which, I think, were moss rose buds, which she greatly longed to have in her childish hands to look at. The power to do so came to her when she was in trouble and ill, and cared little for it or the tarts on it. Alice Cary echoed the same thought and common experience, when, after a life of struggle and toil, she said to a friend, in her last illness, through which she was still at work, "I have gathered a few beautiful things about me, and now it is too late.'" "She went to enjoy others far better. Her life of sacrifice and struggle here, had developed noble traits of character, and when these were perfected, she was taken from these poor unsatisfying toys, she had gathered about her, to substantial, lasting joys. Do you remember Mrs. Browning's noble lines on a child sleeping, its playthings fallen from its grasp?

> "Differing in this, that you
> Clasp your playthings sleeping,
> While my hand shall drop the few
> Given to my keeping.
> I, sleeping, shall be colder,
> And in waking, presently,
> Brighter to beholder."

I am glad always that the Institute stands in our midst, open to all, and especially to those to whom very expensive amusements are not within reach. Happiness is a great softener and humanizer. When I read the sickening accounts of crime in our daily papers, I wish more innocent enjoyments were open to the people."

The Vegetable Garden.

December.—The condition of the ground and of the weather will somewhat affect the work to be done this month in the garden. When the ground is wet it will not do to go upon it, but when dry or frozen, the clearing up of old crops ought to be attended to; manure may be hauled out and compost piles prepared. Land that is of a stiff texture should be plowed, so that the frosts may mellow it. Plants in frames ought to be aired daily, whenever the outside temperature will allow, and carefully covered at night with mats to avoid freezing.

The American Farmer.

PUBLISHED ON THE FIRST OF EVERY MONTH

BY SAML. SANDS & SON,

9 North street, near Baltimore street, Baltimore, Md. (sign of the Golden Plow.)

SAML. SANDS, WM. B. SANDS, } Editors and Proprietors.

SUBSCRIPTION, $1.50 a year, in advance. To Clubs of five or more, $1.00 each. For $10, eleven copies will be sent.

ADVERTISING RATES.

	1 Mo.	3 Mo.	6 Mo.	1 Year.
One Square, 10 lines.....	$ 1.50	$ 4.00	$ 7.00	$ 12.00
Quarter Page.....	6.00	15.00	22.50	35.00
Half Page.....	12.00	25.00	40.00	70.00
One Page.....	20.00	45.00	75.00	120.00

Cover Pages subject to special contract.
Transient Advertisements payable in advance—all others quarterly.
Advertisements should reach us by the 20th of the month, to secure insertion in the succeeding issue.

DECEMBER 1, 1874.

The American Farmer for 1875.

We hope our friends will actively canvass, as far as they can do so with convenience, for subscribers for the new volume. We are under obligations to so many of our friends in this direction, that we fear to seem pressing. To those who are willing to be rewarded for their services, other than by the consciousness of accomplishing a good work, we beg to refer to our premium list, given elsewhere.

Clubs and Renewals.—Please forward these as early as practicable. We hope our friends in every neighborhood will endeavor to interest some active person in the work of procuring subscriptions for the *Farmer*.

POSTAGE ON THE FARMER.—It will please be remembered that each subscription for the new year should be accompanied by *ten cents* for postage, which the publishers hereafter have to prepay. This requirement we waive, however, on subscriptions received before 1st of January.

THE *Farmer* FOR JANUARY, 1875.—It is probable the number for the next month will reach our readers a day or two later than usual, as we may delay it here till the 1st, to enable us to comply with the new law concerning postage, which does not go into effect until that day.

Our Correspondents.

We present in this number of the *Farmer* such an array of these, that we would fail in courtesy did we not especially call attention to the good things they offer. Our readers must have been struck by the incisive and striking paper in our November number written over the signature of "Freedom," a *nom de plume* well sustained in the manner in which he treats authorities and time-honored usages. We bespeak for the series of which that number was the first and the second of which appears in this issue, a careful reading. Their author is a gentleman of scholarly attainments, and, it is needless to say, of distinguished ability, besides being a practical farmer. He proposes to throw new and needed light upon the question of perpetuating fertility and the production of large instead of small crops, and his introduction is an earnest of the vigor and freshness with which he approaches the discussion. No fears of technicalities nor of the dryness of the subject ought to prevent any one from carefully studying these articles on *The True Theory of Farming*.

Gen. Goe and Mr. Ridgely give some interesting facts for sheep growers. Both of these gentlemen live in sections where the value of sheep is properly appreciated; hence their desire to enforce by their teachings a recognition of it by others.

Mr. Massey treats in his usual happy style of a variety of horticultural matters. He knows whereof he speaks, and writes with a ready pen. Especial note should be made of his discovery of the *efficacy of a decoction of May-apple root as a destroyer of the potato bug*. Mr. Leighton's paper is also a valuable one.

Our correspondent "Nansemond" criticises an article copied into the *Farmer* last month from the *Gardeners' Monthly* on Pear Culture, and also sends an equally instructive paper on the Cultivation of the Sweet Potato. We are happy that *any* cause should have brought out this experienced horticulturist, whose style is a happy one and whose reputation is wide, and well deserved.

Our friend T. G. gives us an interesting report of that progressive farmers' club, the Gunpowder, and a North Carolina correspondent makes some seasonable suggestions on feeding cattle.

Our regular French correspondent gives a resume of the latest intelligence in agriculture abroad, which will be found interesting reading as well as sometimes of immediate service in this region.

Mrs. Moore gives us two papers, which will be read with pleasure, and Mr. Thorne one on a topic of extreme importance.

Mr. Brackenridge's department is well occupied, as usual, and it will be seen that we have added a new department to our usual variety—that of the cultivation of *water*, including all that it contains that is edible or that may be otherwise useful to man. The interest in this branch is growing, and the gentleman who has kindly agreed to furnish the material for our pages on this subject, Mr. Alex. Kent, has every facility and quality to make whatever comes from him of value and interest.

We hope in the coming volume to hear frequently from these and all our correspondents who so kindly favor us and our readers. Besides those to whom we have been thus indebted in the past, we have promises from some who have not hitherto contributed to the pages of the *Farmer*. We therefore hope to make our journal better than ever in the future.

THE MARYLAND STATE POULTRY ASSOCIATION.—This society will hold its exhibition, January 5, 6, 7, 8, at Raine's Hall, in this city. There is no doubt that a fine display can be made, and those in charge have acted wisely in selecting a fine hall, and in inviting exhibiting from abroad. We have little doubt that the show can be made a great success.

☞ We were during the past month favored by a visit from our old friend, DR. DAVID STEWART, now of Delaware, but formerly of this State, and for many years chemist to the Maryland Agricultural Society, and widely known as well for his professional labors as for his contributions to the press on chemical subjects. The doctor holds his own, and is as enthusiastic as ever in the cause of true science, and in his hopes of the application of its principles to the improvement of mankind.

PROF. TOWNEND GLOVER, the Entomologist of the U. S. Department of Agriculture, also recently called upon us. His labors upon his great work on Injurious and Beneficial Insects still continue, and the volumes already published in limited numbers at his private charge have received the highest encomiums of the scientific men of both continents. He is now engaged upon a volume of the *Hemiptera*, conjointly with Dr. P. H. Uhler, of this city, who is recognized, we believe, as the highest authority on that order. The result of their united labors will be a production unique in entomological research and illustration. There has been, at times, a good deal of adverse criticism of the Department of Agriculture, but it would have been difficult to have found a man to fill the place of Glover as well as it would those of Saunders and Dodge.

MR. M. J. LAWRENCE, editor of the *Ohio Farmer*, lately paid us a fraternal call. He expresses himself as very hopeful of the condition of farmers and farmers' affairs in the West; reports the Patrons as flourishing in his State, and looks upon the order as highly beneficial in stimulating to improved education and higher culture the agricultural classes, besides useful from its advantages in affording opportunities for co-operation in business transactions.

Vick's Floral Guide for 1875.

We have received from the author advance sheets of this indispensable hand-book. Mr. Vick has this year surpassed himself, and for neatness, good taste and usefulness, the designs and text are above his ordinary high standard. There is nothing flashy about it, and the execution fits it for a lady's table, while its contents make it invaluable in the flower and vegetable garden. See his advertisement of it elsewhere. We are willing to guarantee that no one will regret the 25 cents which is the moderate cost of the four numbers for next year.

☞ We are so much pleased with this work, that we offer each of our subscribers who will send us, in renewing his subscription, at the single rate, of $1.50, one *new* name for 1875, to send him free a copy of the *Guide*. This will be a premium which, for beauty and intrinsic merit, is worth a score of "chromos."

MR. GEO. C. GILMER.—We are glad to learn from a letter recently received from this esteemed friend and correspondent, that his health, much impaired by a stroke of paralysis in July last, is improving, and that he is hopeful of its being so much so by the next spring that he can resume the management of his farm, and, he adds, "write for the dear old *American Farmer*, of far-famed county of Albemarle and dear Virginia." He writes further:—"I am glad to hear my friend, Mr. D. H. Brennan, near Charlottesville, has been and is now doing some of the very best and highest grade of farming ever done in our county, from all of which I hope he will let us hear through your valuable *Farmer*, for he is truly one of the men whose light should not be placed under a bushel. Not having been able to get from home, or even to see much about home, I cannot write you of our crops or prospects, but from what I hear I hope and believe we are on rising ground."

AGAIN IN THE HARNESS.—Mr. Frank G. Ruffin, well known to the farming community, and formerly the editor of the *Southern Planter*, has again become connected with that journal, and will henceforth edit it in the interests of the Patrons of Husbandry. The granges of Virginia are fortunate in securing the aid of so eminently able and practical a man.

Good Words for the Farmer.

A *new* subscriber, in Worcester county, Md., writes:—"The first number of my subscription (October) has been received. To say that I am pleased with it conveys but a slight idea of my appreciation. I think that this number alone is worth the whole year's subscription and more."

An *old* one, in Chesterfield county, Va., about removing and discontinuing farming, writes us to stop his paper, and says:—"In taking leave of the *Farmer*, allow me to say, I have been a subscriber to, and a constant reader of, the same for upwards of twenty years, (except during the war,) and regard it as one of the very best agricultural papers published in this country."

A subscriber, in Georgetown county, S. C., writes, in remitting for '73, '4 and '5:—"I have to apologize for my negligence in not attending to your needs, whilst you have been kindly supplying mine. I am now two years in arrears for your valuable *Farmer*, from which I have derived much benefit. I have drawn much useful knowledge from the pages of the *Farmer*, although its range is so much further north. We are struggling against many difficulties, unreliable labor, a bad government, and a climate in which the white man must be very careful during the summer months; but I am convinced that if *farming* was more studied and attended to, we should be very much better off. The crop for market (rice) absorbs the entire time and attention of most of our land-owners to the exclusion of stock, corn, &c., which you have so often told us is far from the best method—and you are quite right. I hope, however, that farming is becoming more popular."

A friend, in Charles county, Md., writes:—"If you will send me some sample copies I will try to get you up a club, but cannot tell how large. If the *value* of the *Farmer* was known, I would not have any trouble."

A subscriber at Harnett Court House, N. C., writes: "I have been reading the *Farmer* over twenty years—except during the war—and feel as if I can't do without it."

We may be pardoned at this season of the year from gathering up, as an evidence of the estimation in which the *Farmer* is held, some of many of the kind notices received from our brethren of the press:

"As an agricultural journal the *Farmer* is invaluable to all Maryland farmers especially."—*Cecil (Md.) Whig.*

"It is one of the most reliable farm journals published in this country,—its venerable editor, Samuel Sands, Esq., having devoted his attention to agricultural matters all his life. His knowledge and observations are of inestimable value, and the *Farmer* fully reflects that knowledge. Considering its worth, the price of the *Farmer* is a mere nominal sum."—*Towsontown (Md.) Journal.*

"This excellent paper was established in Baltimore in 1819, and is published by Samuel Sands & Son. It is filled with sound information upon all subjects relating to farming. There is nothing about horticulture, floriculture or agriculture that is not touched in some way in its pages. It contains numerous receipts and varied information that are invaluable to the prudent and economical housewife. Fertilizers, implements, machinery, crops, are all treated of and the farmer who reads it must be indifferent indeed if he does not derive benefit therefrom. Subscription price $1.50 per annum. Every farmer should have it."—*Balto. Co., (Md.) Union.*

"Filled with reading in every way beneficial and interesting to the farmer."—*Rockville (Md.) Advocate.*

"One of our subscribers says that 'it is the best guide for farmers he ever saw', and we indorse his statement."—*Garrett Co., (Md.) Gazette.*

"As a farmer's paper this excellent monthly is unequalled."—*Georgetown, (D. C.) Courier.*

"The *Farmer* is an old and popular agricultural monthly, and has always received a large patronage in Virginia and adjoining States, and was never more worthy of its former success than now."—*Richmond (Va.) Whig.*

"One of the very best agricultural works in the South."—*Wytheville (Va.) Dispatch.*

"By far the neatest and best agricultural paper that comes to our office."—*Seddon (Va.) Religious Herald.*

"Always as punctual as clock work; best magazine published for the farming public and decidedly the cheapest publication of the kind in the country. It is worth five times the amount of its subscription price."—*Berkeley Springs (W. Va.) Mercury.*

"The acknowledged excellence of the *Farmer* needs no commendation from us."—*Romney (W. Va.) Intelligencer.*

"This valuable journal, the successor to the familiar periodical so long issued by Skinner, maintains its old character for reliability, and, with the advancement of ideas on the question of agriculture, is really becoming more valuable than it ever has been. Every farmer should have it."—*Hillsboro (N. C.) Recorder.*

"This magazine is well adapted to the South. No planter should be without it."—*N. C. State Journal of Agriculture.*

"What farmer can get along without this superb monthly? Each number is an improvement upon its predecessor, and worth its weight in gold."—*Barnesville (Ga.) Patriot.*

"Every progressive farmer should subscribe for it."—*Monroe (Ga.) Advertiser.*

Baltimore Markets, Nov. 28th.

The quotations below are Wholesale Prices.

Breadstuffs.—*Flour.*—Market firmer, with some inquiry for export. Howard Street Super $4@4.50; do. common to fair Extra $4.75@5.12; do. good to choice Extra $5.25@5.37; do. Family $5.50@6.75; Ohio and Indiana Super $4.00@4.50; do. common to fair Extra $4.75@5.12; do. good to choice do. $5.25@5.37; do. Family $5.50@6.50; City Mills Super $3.90@4.50; do. low to medium Extra $5.25@5.75; do. Rio brands Extra $6.50@6.75; City Fancy brands $8.25; Fine Flour $3.62@3.87. Rye Flour $5.25@5.75. Corn Meal, City Mills, $4.00@4.50; do. Western $3.50@3.75. Buckwheat Flour, Maryland and Pennsylvania $2.75@3.87; New York 3.25@3.50 ₩ 100 lbs.

Wheat.—Market dull. Sales of Southern white at 130@136 cents for fair to good; Amber 128@138 cts.; good to prime Red 129@132 cents; fair do. 120@125 cents; Western, No. 2 Red, in Elevator, 122@123 cents; do. White, on track, 125@135 cents.

Corn.—Receipts of Southern increasing, with active market, and prices rather firm. Sales of good to prime dry white at 78@82 cents; damp to fair white 70@77 cts.; good to prime dry yellow 78@82 cents; fair do. 75@77 cents. New Western Corn also active. Sales of mixed in Elevator, 79@82 cents; do., on track, at 76@82 cents, as to condition; Western white, 81 cents. Sales of old White at 89 cents.

Oats.—Market quiet but firm; receipts light. Sales of inferior to good Southern at 60@65 cts.; mixed Western 62 cents; bright do. 63@64 cents.

Rye.—Firmer, with light offerings, and sales at from 98 to 105 cents for good to prime.

Broom Corn.—In fair demand. Prime Medium, Green and Hurl, 10¼ cents; Red Tipped 8½@9 cents; common, 7 cents ₩ lb.

Hay and Straw.—Quiet. Clover $14@15; Mixed $15@16. Maryland and Pennsylvania Timothy $17@19. Western do. $18@20; Cecil Co. do. $19@21. Wheat Straw $10@11; Rye do. $13@15; Oat do. $13@15 ₩ ton of 2,000 pounds.

Live Stock.—*Beef Cattle*—Market rather dull, especially for low grades; but good Cattle somewhat firmer than previously. Receipts for the week ending 25th, were 3,809 head, of which 2,071 were from Va., 925 from Ohio, 562 from W. Va., 153 from Ky., and 38 from Md.—Prices quotable as follows: Best on sale 5¾@6¼ cents; generally rated first-class 4¾@5¾ cts.; medium or good fair quality 3¾@4¾ cents; ordinary thin Steers, Oxen and Cows 3@3¼ cents.

Hogs.—Market fairly supplied, and prices firm, ranging at 9¼@9½ cents; extra 9¾ cents, net.

Sheep.—Dull; with quotations at 4@5¼ cents; extras 5¼ cents, gross. Stock Sheep in little demand at $2.00@$3.25 ₩ head.

Mill Feed.—Coarse Western Bran $21@22; fine do. $22 ₩ ton; City Mills Brownstuff $22@23; Middlings $21@$22 ₩ ton; Heavy do. 45@48 cents ₩ bushel.

Onions.—Firm and in demand. Red $3; Yellow $3.25@3.50; White scarce at $4.00 ₩ brl.

Potatoes.—Early Rose, from cars, 80@89 cents; country lots 60@65 cents; Nova Scotia at wharf, 80 cents; Sweets $2.50@3.00 ₩ brl.

Provisions.—New clear-rib Sides are quoted at 11¼ cents; Bacon, old Shoulders scarce at 10½ cents; new Sides 13¾ cents; Hams 14@15 cents; Lard 14@15 cents; Mess Pork nominal at $21 ₩ brl. for old. *Butter*—good to choice rolls 28@32 cents; Northwestern solid-packed 33@35 cents for fine to choice fresh; 25@30 cents for good to prime; 20@22 cts. for common to fair. *Cheese*—Western factory 15¾ cts. for choice; 12 to 15 cts. for common to prime. New York factory 15¾ to 16¾ cts. *Eggs*—Prime fresh lots scarce at 30 cts ₩ doz. Pickled in good supply at 22@27 cts., as to quality.

Rice.—Carolina 7@8 cts. Rangoon 6¾@7 cts.

Seeds.—Clover firm and advancing. Good to prime Penna. quoted at 9 cts.; do. Western 9¼@9¾ cts. ₩ lb. Timothy $2.00@2.75. Flax Seed $1.90@2.00 ₩ bushel.

Tobacco.—Receipts so small as to limit business. Market firm, with general expectation of higher prices from shortness of crops. Exports hence during past week 461 hhds. We quote prices: Maryland common frosted $6.50@7.00; sound common $7.00@8.50; medium dull $7.00@9.00; leafy brown $8.50@13.00; bright red to yellow $12.00@18.00; extra $15.00@18.00; fancy yellow $20.00@30.00. Virginia common to good lugs $9.50@12; common to medium leaf $10.50@14.00; good to fine leaf $14.50@18.00; selections $19.00@23.

Whiskey.—$1.02@1.03 ₩ gallon.

Wool.—Quiet, but steady. Burry 25@30 cts.; good long unwashed 32@35 cts.; Merino 18@30 cts.; tub-washed 48@52 cts.; pulled 35@40 cts.

Contents of December No.

Closing of the Volume.....403
The American Farmer, by H. E.....405
Agricultural Improvement in Georgia.....406
Labor Saving in Culture of Tobacco.....407
November Meeting Md. State Agl. Society...408
Virginia State Fair.....409
Agricultural Calendar—Work for the Month..410
The True Theory of Farming—No. 2.....411
Our French Letter.....413
Gunpowder (Balto. Co.) Farmers' Club.....415
On Feeding Cattle.....416
Oil-cake and Bran.....416
Merinos in France.....417
Stock Notices.....417
Poultry for Farmers' Tables.....418
Words from Joseph Harris.....418
Deep and Shallow Setting of Milk.....419
N. Y. Dairymen's Association.....420
Dairy Items.....420
Superior Wool Producers, by W. C. Ridgely.420
Cost and Profits of Getting and Growing a Flock of Merino Sheep.....421
Jerseys in the South.....421
Dangers of Using Carbolic Acid.....422
Eastern Shore Talk, by W. F. Massey.....422
Pear Culture, by Nansemond.....423
Fruits in Tide-Water Va.—Blight—Pears in Clover—by G. F. B. Leighton.....424
Cultivation of Sweet Potatoes.....425
Training Grapes in the Vineyard.....426
Horticulture in Maryland.....427
A Strong Squash.....428
Floriculture, &c., for December.....429
Abutilon Boule De Niege.....429
Aquaculture—Shad and Fancy Fishes—by Alex. Kent.....430
Mr. W. D. Brackenridge.....431
A New Flour.....431
Preservation of Green Fodder.....431
A Good Hint.....431
Dorchester Co. (Md.) Agricultural Fair.....431
Cutting Wheat by Steam.....432
Preservation of Manure.....432
Fly in Wheat.....432
Eastern Shore of Virginia.....432
American Cotton and Tobacco Cultivators wanted in Corsica.....432
Tobacco Trade of Va.....433
Maryland Horticultural Society.....433
Swamp Muck.....433
Report for 1873 of Dept. of Agriculture.....433
The Training of the Young.....433
Fragrant Memories of Travel, No. 3, and My Neighbor an I I, by Mrs. Moore.....434, 435
Vegetable Garden for Dec.....436
American Farmer—Notices of New Vol....436–7
Our Correspondents—Notices of.....436–7
State Poultry Fair in Baltimore.....437
Visits from Old Friends.....437

NEW ADVERTISEMENTS.

Noah Walker & Co.—Clothing.
W. A. Myers.—Fowls for sale.
Watt & Call.—The Watt Plow.
J. J. H. Gregory.—Seed Catalogue.
Peter Henderson & Co.—Catalogue of Plants and Seeds.
James Vick.—Vick's Floral Guide.
E. V. Daily.—Trusses, &c.
Mackenzie Bros.—Saddlery Hardware.
Hubbell & Dunnett.—Hydraulic Engineers.
J. C. Durborow.—Kirby Mowers and Reapers, &c.
R. W. L. Rasin & Co.—Fertilizers.

LIST OF PREMIUMS

OFFERED FOR

CLUBS

OF SUBSCRIBERS TO

THE AMERICAN FARMER for 1875.

Subscriptions can be sent either at the regular rate of $1.50 each, or at the club rate of $1 each.

For regulations concerning postage see below.

The table shows the number of names required at each rate to secure the articles offered

No.	ARTICLES.	Value of Premium.	No. Subscribers at $1.50	No. Subscribers at $1
1.	A collection of Flower or Garden Seeds, or an assortment of Plants and Vines of same value	$5 00	10	20
2.	A $10 collection of Seeds, or of Plants and Vines	10 00	20	40
3.	A $20 assortment of Seeds, or Plants and Trees, *your own selection*, from any of our advertisers	20 00	40	80
4.	Howe Sewing Machine, with Cover and Attachments complete	70 00	80	175
5.	Grover and Baker Sewing Machine, with Cover and Attachments complete	70 00	80	175
6.	Silver-Plated Tea Set	25 00	40	80
7.	Silver-Plated Revolv'g Butter Cooler	10 00	20	40
8.	Silver-Plated Breakfast Castor	8 00	15	30
9.	Silver-Plated Ice Pitcher	15 00	30	60
10.	Silver-Plated Cake Basket	12 00	25	50
11.	Silver-Plated Fruit Dish	10 00	20	40
12.	Set of Silver-Plated Teaspoons	6 00	12	25
13.	Set of Silver-Plated Tablespoons	11 00	20	50
14.	Set of Silver-Plated Table Forks	11 00	20	50
15.	Silver-Plated Pie Knife	4 00	8	16
16.	Child's Silver-Plated Cup	3 00	6	12
17.	Solid Silver Fruit Knife	3 00	6	12
18.	Silver-Plated Cream Ladle	1 50	4	8
19.	Set of Dessert Knives, Ivory Handles	6 00	12	25
20.	Superior quality Carving Knife, Fork and Steel	6 00	12	25
21.	Gold Pen and Silver Case	3 00	6	12
22.	American Gold Hunting-Case Watch	60 00	100	225
23.	American Silver Hunt'g-Case Watch	35 00	60	150
24.	Webster's Unabridged Pictorial Dictionary	12 00	20	50
25.	Webster's National Dictionary	5 00	10	25
26.	Dexter Single-Barrel Breech Loader	22 50	40	75
27.	Dexter Double-Barrel Breech Loader	50 00	75	160
28.	Set of Light Buggy Harness	80 00	60	160
29.	Gentleman's Fine Saddle	20 00	40	75
30.	A pure breed Cotswold, Southdown or Shropshire down Ram	40 00	80	120
31.	A thoroughbred Jersey, Ayrshire or Devon Bull Calf	75 00	120	200
32.	A thoroughbred Shorthorn Bull Calf	100 00	150	250
33.	A pair of pure bred Essex or Berkshire Pigs	30 00	60	100
34.	A pair of pure Chester White Pigs	25 00	50	80
35.	Fairbanks' Portable Platform Scales	23 00	40	70
36.	Fairbanks' Union or Family Scales	14 00	25	50
37.	Fairbanks' Counter Scales	10 00	20	40
38.	Fairbanks' Trip Scales	5 50	10	20
39.	Set Mathematical Drawing Instruments	4 00	8	16
40.	One year's subscription to the American Farmer	1 50		10

☞Subscribers need not all be at one post-office, nor is it necessary for the names to be all sent at once.

☞Send the exact money with each list of names, and state in each letter that you are working for a premium.

☞All new subscribers whose names are received, either separately or included in club lists, before December 31st, will be furnished the last three numbers of this year FREE.

☞This offer of premiums holds good till April 1st, 1875, but any premium will be sent upon demand, as soon as the proper number of names is received, with the money, to entitle the sender to the premium designated, but no name will count unless the money for it is paid by or before the date the premium is claimed. There is no competition. Every one gets what he has worked for, and may make his own selection.

☞Both old and new subscribers count in these lists.

☞Specimen numbers, blanks, posters, &c., furnished on application.

☞REMIT ALWAYS, when possible, by registered letter, post-office order, or draft.

☞We want agents everywhere to extend the circulation of *The American Farmer*. An examination of the above premium list will show it is extremely liberal in its terms, and that the articles offered will give a wide choice, and are as good as the money. We will, however, be willing to pay a *cash commission* to parties who have facilities for making up clubs, and should be glad to hear from such as would prefer to be compensated in that way for their time and trouble.

POSTAGE.—The postage on the *Farmer* having to be prepaid here, each subscriber, whether single or in clubs, will be expected to remit 10 cents, for the payment of the same, with his subscription money. To present some inducement, however, to the prompt forwarding of new subscriptions and the renewal of old ones, we will not exact this payment on any subscriptions for 1875 *received by us before the* 1st day of January, 1875. That is, on all subscriptions for the new volume, coming in before the end of the current year, we will ourselves pay the postage.

☞Address all letters plainly, to

SAML. SANDS & SON,

Publishers of THE AMERICAN FARMER,

9 North St., Baltimore, Md.

INDEX TO VOLUME III—NEW SERIES—1874.

A.

PAGE

Account Book—Advice to open an..... 11
Agricultural Investigations by Dr. E. M. Pendleton, of Ga., 159; by Lawes and Gilbert, in England.....211
Agricultural Implement Trade of Baltimore—R. Sinclair & Co., 5; Thos. Norris & Son, Jno. C. Durborow, Griffith, Baker & Bryan, 6; Joshua Thomas, Geo. Page & Co., A. G. Mott, 65; L. H. Lee & Bro., H. P. Underhill, 112; D. Knox & Co., Linton & Lamott.154
Agriculture, Southern, by C. C. Langdon, 2, 45, 46; by David Dickson, of Ga., 107; in Ga., by aid of Granges.....406
Agriculture, European—In France, by F. C., 19, 92, 133, 172, 197, 236, 274, 309, 334, 381, 413, 417; in Germany, by E. Wenig..21, 91, 333
Agricultural Schools, by Major Geo. Seaborn, 109; Origin of the Colleges, 109, 197, 262; in France and Germany, 237, 414; N. Y. Veterinary College, 355; in Prussia and France.....414
American Farmer—A New Year, 1, 28, 72, 356, 400, 403; in Md. and Va., 38; in other States and counties, 75; in Ga., 189, 218; by H. W. Cosby, 200; Agency of, 29; Union of, and the West Va. Farm Journal, 326; advertisers in American Farmer, 326; the prosperity of, 358; the Farmer in Va., 361; Postage on for 1875, 400; Premium List for 1875, 403; Closing of Vol. III, 403; an Appeal for, by H. E, for 1875.....405
Agricultural Interest—in Md. Legislature, 190; cause of and remedy for its depression, by Wm. Holman.....311
Agricultural Fairs and Trotting Matches, 272; on same, by John Hamilton, 314; State Fairs for 1874, 291; Fairs in France and Germany, 309; in the U. S. for 1874, 327, 345, 356, 357, 358, 360, 361, 396, 397
Agricultural Calendar—Farm Work for Jan., 10; Feb., 49; March, 99; April, 140; May, 165; June, 208; July, 232; Aug., 273; Sept., 307; Oct., 346; Nov., 386; Dec 410
Agriculturists' Opportunities, by J. Harris...418
Agricultural Literature..... 357
Agricultural Science, by Dr. D. Stewart and others.....238
Agricultural Societies, Clubs, &c.—Harford Co., Md., 7, 68; Baltimore Co. Union, 30, 44, 105, 144, 235, 328; pic-nic of, 339. Maryland State Society, proceedings of, 30; Address of President Davis, 44, 408; Proceedings for January, 66; for September, 339; November, 408; February, 103; March, 142; Report of Committee to Legislature, 43, 194; on Sewage, 194; on County Roads, 195; on the Guano Trade, 270; Premium List for 1874, 234. Baltimore Co. Gunpowder Club, proceedings of, 30, 43, 104, 164, 168, 171, 193, 234, 276, 312, 341, 385, 416; Report of Prize Acre of Corn, 104; Va. and N. C. Farmers' Council, 31, 401; Va. State Society, 68; Fair of, 409; Georgia Society, 329. Montgomery Co., Md., Farmers' Convention, 41; Report to on Dairies, 106; Carroll Co. Society, 68; New Club in Carroll, 68; Frederick Co. Society, 68; Washington Co. Society, 68; Kent Co. Society, 68; Lower Gunpowder (Balto. Co.)

PAGE

Club, Address of Prest. Dr Allender, 104; King Geo., Va., Club, 105; Sandy Spring, Md., Club, 107; Baltimore Co., Md., Club, 172, 122; Essay of Jas. Atlee, before do., 129; Queen Anne's, Md., Society, 142; Meeting of Md. Farmers in aid of State Society, 168; National Agricultural Convention at Atlanta.....184, 210
Allen, A. B., a one-horse subsoil plow, by....364
Animals, working, care of.....10, 100, 410
Analyses of Wheat, Corn, Rye, Oats, Potatoes, Clover, Tobacco, Cotton, 231; of Wheat, Bran, Linseed and Cotton-Seed Cakes.....416, 417
Apiary, see Bee Culture.....
Asparagus, Culture of, in N. J..... 85
Ayrshire Cattle, 9; portrait and description of imp. Cow, Model of Perfection, 76; Herd book of..... 206
Alderney (or Jersey) Cattle, by W. P. Hazard, 9; Sale of Mr. McHenry's Herd, 115; Sale at Baltimore, 185, 361; Description and Portraits of Southampton and Lilac, 148; American Jersey Cattle Club, 206; Sale of Mr. Motley's Herd, 206; At the South 421

B.

Barley, Culture of and Manures for.....99, 140
Barns, Farm, Description, with cuts, 258; do. by J. D. Bethune.....336
Bee Culture—On Managing Bees, 25; North American Bee Convention, 31; The Langstroth Movable Frame Hive, by D. M. Worthington, with cuts, 110; Transferring Bees, by same, 149; Artificial Swarming by same, 184; Surplus Honey, by same, 208; Items, 244; Winter Management.....392
Beets, (see Roots) Culture of, in France.309, 413
Bethune, J. D., on Dog and Sheep Question, 145; on Farm Barns.....336
Bliss, O. S., on Co-operative Dairying, (see Dairying;) on Sheep Raising in Md.....146
Black, Mr. of Va., How he Improved His Farm.....176
Bone Mill, David's.....156
Book Farming, by J. P. M..... 63
Business Outlook for 1875..... ...357, 397
Brackenridge, W. D., (see Floriculture, 431) Catalogue of 129
Breadstuffs in England, &c.....217
Broom Corn, To Cultivate.....165
Buckwheat, Cultivation of, 208, 233; and Peas, by G. C. Gilmer, 239; Harvesting....346

C.

Carter, Hill, on the Use of Lime for Wheat...305
Catcheside, Prof., Lect. on Manures.227, 265, 299
California, Products of, by E. Stabler, 29; in 1874.....398
Celery, Culture of, by W. F. Massey..... 61
Cattle—Short Horns, (or Durhams), Devons, Jerseys, (or Alderneys), Holsteins, Herefords, Galloways, Kerry and Swiss, by W. P. Hazard, 8, 9, 10, 58; How to Choose a Good Cow, by Guenon's Method, 89; How to Keep a Cow in Profit, 138; Meeting of Short-horn Breeders' Association, 22; The Kind Our Farmers Want, 58; Cows and Heifers in Winter, 11, 51; in Spring, 100; A

PAGE

Precocious Heifer, 280, 317; Cross-bred Dairy Cows, 90; Sale of M. Coffin's Herd, 191; Value of the Devons, 202, 205; Fatal Disease in, 343, 345; on Feeding Cattle, by R. H. Dulaney, 386; by A. S. L., 416; Oil-cake and Bran for do.....416

Clubs, see Agricultural Societies, &c.

Corn—Adams' Early, 14; the Hudson, by Dr. James Smith, 48; by W. Porcher Miles and others, 48, 118, 190; on the Culture of, 51, and Manures for, 100, 140, 165: Prize Acre of Gunpowder Club, 104, 164; Ohio Mammoth Dent Corn, 118; A New Corn Planter, 137; Corn for Soiling, how to Cultivate, Manure, Feed, &c., 141, 208, 232, 269; Broom Corn, 165; Fodder Corn, its Value, 166, 208, 232, 335, 418; Saving Fodder, 308; Best Crop to Follow Corn, by Gunpowder Club.....415

Cotton, Growing Large Crops of, by Mr. Sandidge, of Miss., 3; Manure for, by Mr. Warthen, of Ga., 3, 48; Seed of, as manure, by Dr. Memminger, 50; Impolicy of Growing too much, by Jno. D. Thorne, 96; on Cultivating, by D. Dickson, 108; Paris Green for Cotton Worms, 131; Large Yield, by T. A. Granger, 217; by Mr. Clapp.....269

Coffin, Chas. E.—On the Cultivation of Lucerne, 97; on Crops for Soiling, advantage of &c., 135; Sale of His Herd.....115, 181, 219

College, Agricultural, by the Editor, 109; by J. S. Skinner.....109

Cole, Lewis F., on the Best Crops for Soiling. 64

Colorado Potato Beetle, (see Potatoes.)

Crops in Europe, by E. Wenig, 21, 333; in U. S., 257, 360, 401; by Agl. Dept., 57, 257; Cotton Crop, 327, 360; Hog Crop at West, 38; Crops in Europe, from Mark Lane Express, 68; Analyses of Various Crops, 231; Failure of Tobacco Crop in the West, 306; Crops in Va., 313, 333; in N. C.....240

Clover, Sowing Seed of, 50, 99; with Orchard Grass, 50, 100; and Lime as Fertilizer, by James Atlee, 129; Cutting, 208; at the South, 293; Clover and Corn at the South..377

Correspondents of the Farmer...72, 114, 357, 436

Cosby, H. W., on Corn for Soiling, &c.....336

Charleston Phosphate Beds.....230

Cider-Making, Receipt for.....352

Currants and Gooseberries, by W. F. Massey. 14

Christianity and Science, by J. D. Thorne...363

Carbolic Acid, Danger of Using 422

D.

Dairy—Co-operative Cheese and Butter Making, by O. S. Bliss, 7, 56, 88; Apparatus for, 167; Creameries, 200; Home-Made Cheese, by same, 255; Best Breeds for Dairy, 8, 57; How to Choose a Good Cow for Dairy, by Guenon's system, 90; Feeding and Management to Keep a Cow in Profit for, 138; Cross-Bred Dairy Cows, Devons, Alderneys, Kerrys, 90; Report on Dairies in Montg'ery Co., Md., 106; Jewett's Milk Pans, with cut, 113; French Butter-Making, 237; Artificial Milk for Calves, 275; Visit to Dairy Farm near Pikesville, 278; Profitable Dairying, 315; Deep and Shallow Setting of Milk, 419; Dairy Items of Mr. Carroll and Mr. Jenkins, 420; Cleanliness with Milk.....315

Devonshire Butter, How Made. 316; a Jersey Cross, for Butter, 317; Short-Horns for Beef and Butter, 317; Keeping Butter Fresh, 317; Mr. Crozier on Dairying, 344; Extraordinary Cows.....395, 396

Devon Cattle.....9, 202, 205

Dickson, David, on Cotton Culture, Rotation of Crops, 108; on the use of Home-Made with Mineral Manure, 160; on Means of Improving Lands.....161

Drains and Ditches, Care of....10, 346, 361, 411

Drill, Value of Above Broadcasting.....295, 299

Druid Hill Park, Visit to, by Mr. Meehan....368

Durham (or Short-Horn) Cattle, 8; Breeders Association, 22; Reports and Lectures on, by Dr. Sprague, Prof. Miles, Dr. Stevenson, A. S. Matthews, &c., 22; The $40,600 Cow, 23; do. Death of, 128; Sale of Mr. Coffin's Herd, 115, 191, 219; a Visit to Muirkirk Herd, with cuts, 146; Great Western Short-Horn Sales, 219; Sales in England, 418; In N. Y. and West.....418

E.

Education, on Agricultural, by H. E.....310

Emigrant Fields of North America, Md. and Va.....132, 134

Emory, R. S., on Pear Culture.....11

Excelsior, Turner's, its Value.....98, 158, 197

F.

Family Circle—Fragrant Memories of Summer Travel, by Mrs. Moore, 252, 288, 434; My Neighbor and I, by same, 365, 399, 435; Farm Homes, by E. B. E., 254; Christianity and Science, 363; Old Age, Plain Talk to Girls, Man and Wife; About Beds, 33; God's Care, 78; The True Woman, 78; Fun at Home, 119; Farm Life, 151; Impure Milk, 152; How to Get Along in Life, Happy Every Day, 153; Good Works, 166; The Christian's Confidence, by J. D. Thorne, 221; Secret of Happiness. Flowers and Fashion, 222; Training of the Young, by J. D. Thorne, 434. *Poetry;* Kind Thoughts; Good Life, Long Life, 32; Recipe for an Appetite, 220; Drawing Water.....365

Farm Accounts, Importance of Keeping.154, 173

Farming, as a Business, 64; Difference in England and U. S.....75

Farmers, How to Make, by H. E.....310

Farmer's Clubs and Papers, by G. C. Gilmer.. 17

Farmer, the, of To-day.....295

Farming, why Unprofitable, by N. T. Hutchins, 233; The True Theory of, by Freedom.....383, 411

Fences in Montgomery Co., Md., 43; Wire do.....137

Fertilizers, (See Manures) Manufacturers of, 293; Use and Economy of, 294; Value of Commercial do., 328; Discussion on.....341

Fish Culture—In Md., 81, 338; Visit to Fish Farm of Alex. Kent, 82, 253; Fish Culture Association, 82; Appointment of Fish Commissioners, 180; Shad Fisheries of Md. and Va.....396, 402, 430

Forage Crop for the South, 174; in France, ...334, 380, 415, 431

Floriculture, &c.—Lawn and Flower Garden, by W. D. Brackenridge, 26, 68, 101, 155, 181, 216, 250, 287, 323, 352, 392, 429; Tri-colored Geraniums, 27; Best Geraniums, 182; Floral

PAGE

Decorations for Dinner Tables, 27; Flower Garden, (cut) 26; Lawns, how to make, 31; Greenhouses in the country, 37; Hydrangea paniculata grandiflora, 64; Papers from a Window, by Mrs. Jane Boswell Moore, 70, 214: Campanula medium calycanthæ, (cut) 77; Erianthus Ravennæ, (cut) 77; Best six Evergreens for lawns, 182; Preserving cut flowers, 183; new Japan primrose, 183; best six varieties of hardy roses, 183; Fine Geraniums, by Mr. Massey, 214, 248; from Mr. Saul, 325; an Ivied Picture Frame, by Mrs. Moore, 215; the Flower trade of N. Y., 216; Rustic Vases, Flower Mission, 216, 217; Smilax, 241; Lantanas, 251; Plants for vases, 289; the Love of Flowers, 290; the Red Spider; a spring-house as a conservatory, 290; the Tamarix, 209; Rose Slugs, Tea-scented Roses, Weeds in Walks, 324; Artistic Nosegays, 325; Culture of Bulbs, (cut) 393; Bedding Plants and Perennials, Lilac Dr. Lindley, 354; Abutilon Boule de Niege, 429; Treatment of Lawns.....392

G.

Galloway Cattle.....58
Garrett, L. S., on Early May Wheat.....343
Gas Lime, Its Value and how Used on Wheat.343
Georgia, Profitable Farmimg In.....295
Gilmer, Geo. C., on Farmers' Clubs and Papers, 17; on Virginia, 62; on Pea-Fallows, 197; How a Va. Farm (Mr. Black's) Was Improved; on Raising Sheep in Va...209
Goe, Genl. Jno. S., Merino Sheep for Md. and Va., 16, 94; elsewhere, 136, 240, 280, 393; in Reply to Farmer of Charles Co., 138; on the Spanish Merino, 177; Sheep-Breeders Among the Patriarchs.....203
Gooseberries and Currants, by W. F. Massey. 14
Granges (Patrons of Husbandry,) Report on, by Montgomery Co. Convention, 42; Address on, by Col. Langdon, of Ala., 45; Md. State Grange, Proceedings of, 68, 145; Platform of the National Grange, 116; Address of same to Cotton States, 117; The Granges and the American Farmer, 188; by H. W. Cosby, 200; in Va., by Major Gaines, 362; Appeal to, by H. E., 363; The Patrons, as a Class Organization, by Major Gaines, 374; Formation of Granges in Md., 397, 422; in Ga.....406.
Grape Culture, (see Vineyard.)
Grass Land and Pastures, Top Dressing.....274
Greenhouse and Lawn, (see Floriculture, &c.)
Greenwell, J. C., on Peas and Buckwheat.....239
Granaries, How to Clean..... 274
Guano, (see Manures.) The Trade in Baltimore, 365; Frauds in, in N. Y., 270; Dissolving Peruvian in Sulphuric Acid, by Prof. Brown, of Ga., 376; in France,..... 414

H.

H. E.—On Agricultural Education, 310; Appeal to Patrons of Husbandry, 363; How to Make Farmers, 310; an Appeal by, for the Farmer for 1875..... 405
H. K.—On Sowing Phosphates with Corn and Wheat.....174
Hallowell, Benjamin, on the Improvement of our Lands..... 66
Hallowell, H. C., on Profit of Sheep Husbandry 149

PAGE

Harrow, The Thomas..... 13
Handsome Estates of—Mr. Hunnewell, 253; Mr. Ridgley, Johns Hopkins, W. T. Walters 281
Holstein Cattle, 57; Mr. Shoemaker's Herd of, &c.....361, 418
Hereford Cattle.....58, 280
Holman, Wm.—On the Prospects in Va., 64; on the Sheep Question, 148; on Fertilizers, &c., 199; on the Depression of Agricultural Interest.....311
Horses—Care of Colts in Winter, 11, 51; on Stabling, 22; Lexington Stock in Md., 189; Improvement of, in France, 98, 236; on Breeding, 206; Percherons, 219, 244, 359, 394; Care of Teams, 317; Protecting from Flies.....318
Horticulture—Pear Culture, by R. S. Emory, 11; Variation in the Season of Ripening Peaches, by J. W. Kerr, 13; Deep-Planting Peach Trees, by W. F. Massey, 13; Persimmons, English Walnuts, Filberts, Gooseberries, &c., by same, 13, 14; Potash Salts for Peach Orchards, by Col. E. Wilkins, 18; on Variation in Ripening Peaches, by same, 123; Beatrice Peach and Curculio, by same, 18; How Deep to Set Peach Trees, by J. Fitz, 18, 87; do., by "Peter," 19; Sulphur for Fruit, 27; Penna. Fruit Growers' Association, 35, 74, 83, 150; Maryland Horticultural Society, 30, 52, 180, 217, 249, 288, 320, 433; Election of Officers of, 73, 118, 349; Exhibition of, 347; Va. Fruits in England, 35; Packing Fruit for Market, 52, 98; Planting Out Orchards, 52; Eastern Shore Talk, by Mr. Massey, 60, 422; Dwarf Fruit Trees and Pruning, 85; Destructive Insects and their Extermination, 85; Soils Best Adapted to Fruit Raising, 83; Pears and Peaches, Cultivation of, 83; Manures for Fruit Trees, 85; Pear-Blight, 86; Small Fruits Recommended, 86; New Fruits, by J. W. Kerr, 86, 125; Planting Peach Trees, by L. W. G., 53, 125, 389; by the Editor, 73, 127; Horticultural Exaggerations, by W. F. Massey, 102; by N. F. F., 182; The Peach Crop for 1874, 178; on the Peach Tree, by R. Chisolm, 212; Renovating Old Apple Trees, 212; A New Enemy of the Peach, 213; Large and Small Fruits in Same Plantations, 213; Prof. Thurber on Stocks for Fruit Trees, 247; Dwarf Pears, Discussion on, 248; The Curculio, 249; Protection of Fruit Trees Against Frost, 277; A Day Around Baltimore, 281, 427; Orchards Cultivated and Otherwise, 282; Early Apples, by Mr. Kerr, 286; Securing Apples for the Off-year, 286; A Useful Hint About Seeds, 291; Planting out Orchards, 308; Treatment of Fruit Trees, 314; A Hint in Fruit Growing, 314; Splendid Horticultural Collection in Harford Co., Md., of Capt. Snow, 320; Culture of Blackberries, 321; Protecting Buds and Flowers of Fruit Trees from Frost, by Mr. Fitz, 321; Remedy for Peach Borer, by same, 322; Yellows in the Peach, 322; Apples and Peaches for Md. and Va., 322; a Visit to Col. Wilkins' Peach Orchards, 331; to Massey & Hudson, 332; a Fine Seedling Peach, by R. C. Shoemaker, of Pa., 115; Sod

PAGE

vs. Clean Culture for Pears, 181; Fruits near Washington, D. C., 181; Best Time to Manure Trees, 181; Wash for Fruit Trees, 181; Root Pruning, by J. Fitz, 211; Fruit Drier, (cut,) 263, 351; Setting Out Currants, 354; Pear Culture, by E. P. Powell, 387; by Nansemond, 423; Fruit Drying in California, 388; Plowing among Apple Trees, 389; Fruits in Tide Water of Va., &c., by G. F. B. Leighton.....424

Hygiene—Regular Eating, by Dr. Hall, 34; Seasonable Food for Farmers, by same, 262; Hints for Nurses, 119; Big Sunday Dinners, 119; on Management of Children in Hot Weather, 262; Summer Diet for Farmers, 296; Drink for Sedentary Persons, 296; Hutchins, N. P., Essay—Why Farming is Unprofitable.....223

I. J.

Ice Houses, by Tar Heel, 98; by J. W. King.277
Insects, to Destroy.....246, 382
Ireland, Farming in.....296
Improvement of our Lands, by Benj. Hallowell, 66; by D. Dickson.....161
Improvement in Milling.....431
Jackson, A., on Raising Silk Worms.....137

K.

Kent, Alex. Fish Farm of.....82, 338
Kerr, J. W., on Ripening of Peaches, 13; on Planting Trees, 52; on New Fruits, 86; on the Use of Kainit, 278; Kainit, use of.....278
Kerry Cattle.....58
King, J. H., on the Persimmon, Papaw, &c..54
Kinnaird, Lord, Experiments with Barn-yard Manure.....161

L.

Langdon, Col. C. C., on Southern Agriculture, 2; on Patrons of Husbandry.....45, 46
Lawns, by F. R. Elliott, 31, (see also Floriculture, &c.)
Lee, Dr., on the Elements in the Air for Crops 29
Lime—On the Application of, by L. H. McGinnis, 14; Lime and Marl, 100; A Spreader for, (cut) 113; do., and Clover, as Fertilizers, 129; for Wheat, 305; Gas Lime, its Value, 306; Gunpowder Agricultural Club on Lime.312
Live Stock, (see Cattle, Horses, &c.)
Lucerne, Sowing Seed of, 51, 166, 250; Cultivation of, 97, 136; in France.....172

M.

Maryland Institute, an Evening in, by Mrs. Moore.....398
Manure-Making—Composts, &c., 11, 49, 100, 273, 307, 346, 386, 410, 432; for Corn, 100; Poultry Dung, 11; Cotton Seed for, 50: Management of Stable Manure in Germany, by E. Wenig, 91, 339; Manure and Plowing, by W. H. White, 94; on Straw as a Manure, J. M. McCue, 95; Pea Fallows for Manuring, 97; A Good Fertilizer, 120; Liebig's Recipe, 120; A Home-made Fertilizer, by J. Wilson, 130; Farm-yard in conjunction with Mineral, by Dr. E. M. Pendleton, of Ga., 142, 159; on same, by D. Dickson, of Ga., 160; (also see French letters in March, July and Oct. Nos.;) on Improving Barn-Yard,

PAGE

by Lord Kinnaird, 161, 229; Guano and other Fertilizers in France, 198; Fertilizers at the South, by Wm. Holman, 198; Natural and Artificial, by Prof. Catcheside, of England, a Lecture, 227, 265, 299; a Description of Charleston Phosphate Beds, 230; Home-made, by W., of Ala., 238; Fertilizer of Mr. H Carroll, 241; Peruvian Guano in France, 334; the trade in at New York and Baltimore, 270; Manures, by Baltimore Co. Gunpowder Club, 277; Kainit, its use, by J. W. Kerr, 278; Manures for Wheat and Rye, 293, 307; Elements of Manure in the Air, by Dr. Lee, 295; Commercial Fertilizers, by Prof. Atwater, 328; Fertilizers at the Vienna Exhibition, 335; Natural and Artificial, 382; management of, by M. C. Carpenter, 383; discussion on, by Gunpowder Club, 384; Use of Fossil Phosphates, Guano, &c., 414; Muck, how to apply.....433
Milling, improvement in.....431
Markets, Baltimore, 39, 79, 121, 158, 224, 264, 278, 330, 366, 402; The Prices of Grain in Europe..... 74
Mangel Wurzle, (see Roots.)
Marl and Lime, application of.....100
Maryland, as a Desirable State for Emigrants, by Prince George's, 134; For Early Vegetables.....285
Massey, W. F., on Various Fruits, &c., (see Horticulture, Pear Culture, &c.;) a Visit to His Farm.....332
Meadows, 209; Timothy 233, 273, 307; Growing Timothy on Eastern Shore.....386
Meehan, Thos. R., A Visit From, 287, 281; His Account of His Visit to Baltimore, 388; His Remedy for Yellows in the Peach.....322
McCue, J. M., a Reminiscence by, 93; On Straw as Manure..... 95
McGinnis, L. H., on the Application of Lime, His Lime Spreader, with cut.....113
McHenry, J. Howard, Sale of His Jersey Herd, 116; Description and Portraits of Bull and Cow, 148; Sale of at Baltimore,185
Millett, on the Cultivation of. 165, 205, 233
Mowers and Reapers, History of their First Introduction, 222; The Champion.....324
Muck, on the Use and Application of...304, 346

N. O.

Newton, Hon. Willoughby, Death of, 225; a Sketch of His Life, by Col. Mayo.....270
Oats, Manures for, and Sowing of, 51, 99, 140; Rust Proof and Winter, 325; Sowing of, at the South 378
Onions, the best kinds, by W. F. Massey..... 61
Orchard Grass Seed, 51, 100; Sowing with Red Clover, 51; great need of.....256, 398
Orchards, (see Horticulture.)

P.

Paris Green, (see Cotton Worms, Potato Beetles.)
Pastures—Renovating, by Bonedust, &c., 51, 100
Pear and Peach Culture, (see Horticulture.)
Peas and Pea Fallow in Va.....97, 238
Pendleton, Dr. E. M., Agricultural Investigations by.....159, 192
Persimmon, Cultivation of. 13, 54

PAGE

"Peter" on Deep Planting of Peach Trees.. 19
Potatoes—Extent and Value of the Crop, by W. H. White, 235, 338; Appearance of the Potato Bug in Md., and Remedies for, 99, 225, 245, 264, 285, 313, 355, 423; About Some Potatoes, by W. F. Massey, 285; Early, Cultivation of, and Manures for, 99, 140; in France, 173; Cultivation of, in Va., 155; Fall Potatoes, 165, 273; a New System of Cultivating, 219; Sweet Potatoes, by Nansemond 425
Potato Beetle, Description and Engraving... 99
Plaster, Sowing on Clover Fields, &c., 141; Effects of.....355
Poetry, (see Family Circle.)
Potash Salts for Peach Orchards..... 18
Poultry—Monagement in Winter, 11, 52; As Farm Stock, 25; Profits from One Hen, 29; Western N. Y. Show, 111; Dust Baths, 111; Exports from France, 173; Profits of Poultry Keeping, 185; Care of, 206; to Break Hens from Setting, 224; Feeding for Rapid Growth, 245; To Cure Gapes, 291; Hens That lay well, 319; Best Breeds, 312; Preserving Eggs, 354; Dark Brahmas, 362; For Farmer's Tables.....418
Premium Lists—For the Farmer, 156, 356, 403; of Md. Agl. Socy., 234; Md. Hortl. Scy 348
Publications Received.....157
Pumpkins, to Cultivate, 166; to Keep for Stock.....359

R.

Ragland, Major—Report on Tobacco..... 4
Recipes—Domestic and other, 33, 34, 38, 119, 153, 397; for Persimmon Beer, 38; for Thrush in Horses, 68; to Tan Skins.....287
Rice—Rough, as a Forage Crop for the South 174
Root Crops—On the value and cultivation of, 100, 165; harvesting, 346, 387; Ruta-bagas, how grown and fed, 136, 141; Sugar Beets, Carrots, Parsnips, 141; Manure for Beets, 173; Mr. Franklin's Plan with Ruta-bagas, 248; Manure for Roots.....199, 208
Rye—for soiling, by C. E. Coffin, 135; sowing of, and manures for.....273, 293, 307

S.

Salt—For Live Stock, 52; for Manure..... 51
Seaborn, Mr., on Agricultural Schools.....109
Seed—Selection and Sowing, by Maj. Hallett, of England.....299
Separator—Improved Diamond State, (cut) 207
Sheep—Merinoes for Maryland and the South, 16, 94, 136, 240, 280, 393; Spanish Merinoes, 177; in connection with grain growing, 94; how to use a ram, 23; Encouragement for Sheep Raising in Montgomery co., Md., 42; Raising Sheep, by Benj. Hallowell, 67; Dog and Sheep Laws in Md. and N. Y., 70; Sheep Raising in France, 92; Merinoes vs. Cotswolds, 96; Care of Sheep, 100; J. D. Bethune on Dog and Sheep Question, 145; Sheep Raising, by O. S. Bliss, 146; in Va., by W. Holman, 148; on the Profit of Sheep Husbandry, by Hy. C. Hallowell, 149; large vs. small breeds in France, 173; a Plan for Protection to Sheep, by Legio Octima, 177; Among the Patriarchs, by Mr. Goe, 203; Merinoes, by R. Chisolm, 204; protection to

PAGE

required, by Ruffin Club, 204; on raising in Va., by Mr. Gilmer, 209; a Big Fleece in California, 242, 381; Mr. Goe's Fleeces, 243; Mr. Mitchell's Cotswolds, 256; on Raising for Profit in Baltimore County, 276; by Mr. Worthington, 343; Gen. Cheatham on the Profits of Sheep Raising, 279; what $5 did in Sheep Growing, by a boy, 296; Early Lambs, the advantage of, 316; Care of Sheep in Winter, 316; Weaning Lambs, 316; a Cross of the Merino on the Cotswold, 217; on raising of, by W. C. Ridgely, 342, 420; Sheep Interest and the Reciprocity Treaty, 343, 422; Shropshires, a description of the, 379; Wool Production in U. S., 398; Merinos in France.....417
Short-horn Cattle, (see Durhams.)
Silk Worms, Raising by A. Jackson.....137
Soiling, Crops for, by L. H. Cole, 64; by C. E. Coffin, 133; Corn for, To Cultivate, &c. 141, 336
Stock—Fattening of, 334; Care of, 346, 387, 410; Pumpkins for, 359; Miscellaneous Notes on.....23, 68, 74, 114, 115, 127, 242 244, 257, 318, 319, 315, 398, 417
Stewart, Genl. Geo. H.—Report of, to Md. State Society, from Committee to Legislature of Md.....143
Swine—Cure for Kidney Worm and Mange, 23; The Chesters, 23; Diseases and Remedies, 41; Care of Breeding Sows, 100; Value of the Berkshires, 205; Large Hogs, 205; Growing and Fattening, 243; Pens for, 318; Sulphur for, 318; How to Raise Pigs.....395
Stewart, Dr. D., on Science applied to Agriculture.....258
Swiss Cattle.....58
Snow, Captain C. H.—His Horticultural Collection.....320
Sportsman's National Convention 365

T.

Thorne, John D., Communications from, 96, 221, 363, 433
Tobacco—Culture of, by Major Ragland, 4; Guano for, 51; Preparation of Plant Beds, by R. H. Robinson, 71; Green Crops as Manures for, 108; Tobacco Worms, 130; Setting Out, 166; Champion Tobacco County of Va., 189; Raising Fine Leaf in Va, 193; by Mr. Beale, 196; Plaster for, 250; A Fine Crop in Va., 262; Management of Fine Yellow, 272; Failure of Crops at the West, 306; in Va., 313, 333; an Experiment in its Cultivation, 379; Labor-saving in Growing; Tobacco and Cotton in Corsica, 432; Tobacco Trade of Va.....433
Tomatoes, Best Kinds, by W. F. Massey..00, 422
Turnips, Swedes and Ruta-Baga, (see Roots;) Flat Turnips, 233; by D. Landreth & Son, 261; Manures For.....273

V.

Vegetable Garden, Work in, 24, 50, 101, 141, 166, 209, 233, 274, 308, 359, 387, 435; Hot-Beds, How to Make, 59; Notes Among Vegetables, by N. F. F.....283
Vineyard—Growing the Catawba Grape Successfully, 24; Profit in Grape-Growing, 24; On the Best Varieties of Grapes, by J. W. Kerr, 53; on Grape Culture, by Dr. Fisher,

PAGE

61; Discussion on, by Pa. Fruit-Growers, 84; Grape-Vines and Wine-Making, by A. Parkhurst, of S. C., 128; New Grape, The Cambridge, 214; Summer Pruning, 214; Training Grapes, (with cut) 287; The Maxatawney Grape, 287; The Phylloxera in France, 310, 382, 415; White Grape Wanted, 321; Recipe for Wine-Making, 345; Grape Report for 1874, by C. W. R., 351; What Grapes to Plant, by C. W. R., 390; How to Preserve Grapes, 351; Ulster Co., N. Y., Method of Training Vines (cuts).....426

Virginia—What She Was and May Become, by Geo. C. Gilmer, 62; Account of Mr. Black's Farm, 175; on the Prospects in Va., by W. Holman, 64; Value of Her Lands, by Col. Jno. Willis, 162; Farming in.....250, 432

W.

Warthen, Mr. of Ga., on Raising Cotton...3, 48

Wenig, E., on Agriculture in Germany, 21; on Management of Stable Manure.....91, 333

Wevil, to Prevent Ravages of the Black, by Mr. Atlee.....210

White, W. H., on Ploughing and Manuring, 94; on the Potato Crop.....235, 337

Willis, Jno., on the Value of Va. Lands.....162

Wilkins, Col. Ed., on Peach Culture, the Curculio, &c., 18; on the Variation in the Season of Ripening Peaches, 123; a Visit to His Orchards.....331

PAGE

Wilson, J., A Home-Made Fertilizer by....120

Williams, H. C., on Packing Fruit for Market. 98

Wire Fences, by R. C. Shoemaker, of Pa....137

Worthington, D. M., on the Apiary, with cuts, ...110, 149, 208

Wheat, to Prevent Black Wevil in, by Mr. Atlee, 210; Fertilizers For, by Dr. Thompson, 240; the Fultz, 250, 269, 304, 330; Culture of, in U. S. and England, 268; Deep Ploughing as a Preparation for, 268; Ploughing for, 273; Winter Wheat and Clover in France, 274; Manures For, and Rye, 293; Drilling in of Wheat, its Advantages over Broadcasting, 295, 304; Time and Manner of Seeding and Selection of Seed, by Major Hallett, of Eng., 297; Comparative Yields of Various Varieties of, and Manures for, in Chester Co., Pa., 304; Quantity of Seed to the Acre, 304; on Sowing of, by Hill Carter, 305; Lime for Wheat, by the same, 305; Sowing of, at the West, and the Use of Lime for, 306; by the Editor, 307, 346; Early May, by L. S. Garrett, 343; The Crop of 1874 in Europe, 364; Wheat, Inspections in Baltimore, 364; Cutting by Steam, 432; Fly in Wheat, Remedy for, 432; Wheat Growing in N. Y., by Mr. Foote.....393

Whitelock, W. & Co., Their Fertilizers, Discussions of, by Gunpowder Club.....277

Wine Making, Recipe For.....345

OUR

Illustrated Catalogues

FOR *1875* OF

EVERYTHING

FOR THE

GARDEN!

Seeds! Plants!

Implements, Fertilizers, etc.

Numbering 175 pages and containing five *beautiful colored plates*, mailed on receipt of 50 cents.

Catalogue, without plates, free to all.

Peter Henderson & Co.

35 Cortlandt St.,

NEW YORK.

dec-3t

My annual catalogue of Vegetable and Flower Seed for 1875, will be ready by January 1st for all who apply. Customers of last season need not write for it. In it will be found several valuable varieties of new vegetables introduced for the first time this season, having made new vegetables a specialty for many years. Growing over *one hundred and fifty varieties* on my several farms, I would particularly invite the patronage of market gardeners and all others who are especially desirous to have their seed pure and fresh, and *of the very best strain*. All seed sent out from my establishment are covered by three warrants as given in my catalogue.

d-1t JAMES J. H. GREGORY, Marblehead, Mass.

IMPORTANT.

TRUSSES, SHOULDER-BRACES, ELASTIC STOCKINGS, SUSPENSORIES, SYRINGES, INHALERS, &c. HYDROMETERS, THERMOMETERS, MICROSCOPES, STEREOSCOPES, MAGNIFYING GLASSES, &c., &c.

No. 135 W. Fayette St., (above Park St.)

BALTIMORE, MD.

d-1y E. V. DAILY.

VICK'S

FLORAL GUIDE

FOR 1875.

Published Quarterly.—JANUARY NUMBER just issued, and contains over 100 PAGES, 500 ENGRAVINGS, descriptions of more than 500 of our best Flowers and Vegetables, with Directions for Culture, COLORED PLATE, etc.—The most useful and elegant work of the kind in the world.—Only 25 cents for the year.—Published in English and German. Address,

JAMES VICK, Rochester, N. Y.

Fertilizers.

SOLUBLE SEA ISLAND GUANO,

Of Undoubted Excellence for Cotton and Tobacco.

Ammoniated Alkaline Phosphate.

The Patron's Manure—to Whom we Refer.

Bone and Meat Fertilizer.

This Article being combined with Potash, contains all the elements necessary for the growth of the plant and maturity of the fruits.

Lone Star Brand of Flour of Bones.

From our Extensive Factory at Fulton, Texas.

Ammoniacal Matter.

Manufactured of Uniform Quality.

POTASH SALTS,

Of our own importation.

SULPHURIC ACID, DISSOLVED BONES, and all articles required for the making of a good manure, in store and for sale by

R. W. L. RASIN & CO.

S. W. Cor. South and Water Sts.,

dec-1y **BALTIMORE, MD.**

NOAH WALKER & CO.

THE

Celebrated Clothiers

OF BALTIMORE, MD.

Announce the introduction of a plan of ordering

CLOTHING AND UNDERWEAR BY LETTER,

To which they call your special attention. They will send on application their improved and accurate RULES FOR SELF-MEASUREMENT, and a full line of samples from their immense stock of

Cloths, Cassimeres, Coatings, Shirtings, &c., &c.

A large and well-assorted stock of READY-MADE CLOTHING always on hand, together with a full line of FURNISHING GOODS.

NOAH WALKER & CO.

Manufacturers and Dealers in Men's and Boy's Clothing and Furnishing Goods, either Ready-Made or Made to Order.

d-1y **165 and 167 W. BALTIMORE STREET, Baltimore, Md.**

MACKENZIE BROS.,

Importers, Manufacturers and Dealers in

SADDLERY HARDWARE AND COACH FURNITURE,

Oils, Paints, Varnishes, Iron and Steel Carriage Bolts,

Horse-Covers, Lap Rugs and Fly Nets,

Saddle-Trees, Wood Stirrups, Gum Horse Covers.

Depot and Baltimore Agents for Philadelphia Axle Works and Henry's Patent One-Plate Springs.

338 W. BALTIMORE STREET,

dec—1t **Baltimore, Maryland.**

A NEW GOOSEBERRY,

THE EARLY KENT.

We now offer plants of this for the first time. We claim that it is enormously productive, never mildews, and is of a good marketable size, fully ten days before the Houghton. Has been thoroughly tested by several of our best fruit growers. We refer to R. S. Emory, Esq, and E. M. Wilkens, Esq., of this place, both of whom have tried it.

PRICE 50 cents each. $4.00 per dozen. $30.00 per 100. We will mail 3 strong plants for One Dollar. Send 25 cents for our New Catalogue, and get the value of the money in Flower Seeds thrown in.

W. F. MASSEY & CO.

(Late MASSEY & HUDSON,)

dec-tf **Chestertown, Kent County, Md.**

THE WATT PLOW.

VICTORIOUS ON EVERY FIELD.

Those Who Use It Will Have no Other.

AWARDED FIRST PREMIUM AT EVERY FAIR ATTENDED IN 1874.

VIRGINIA STATE FAIR AT RICHMOND—First premium on three and four-horse sizes, right and left hand. At the plowing match, ALL PREMIUMS AWARDED white plowmen were taken with Watt Plows of one, two, three and four-horse sizes, and colored plowmen with one, two and three-horse sizes, BEING SEVEN OUT OF EIGHT PREMIUMS.

North Carolina State Fair at Raleigh. South Carolina State Fair at Columbia. Georgia State Fair at Atlanta. Orangeburg, S. C. Danville, Va. Weldon, N. C. Charlotte, N. C. Point Pleasant, W. Va.

This, with its great reputation before it, has won new laurels this year which must convince every farmer of its superiority. No choking where bright and smooth. No labor to plowmen. One-third less DRAUGHT to the team. Thorough burial of the weeds, grass, &c. Great STRENGTH, durability and economy, and complete pulverization of the soil. Warranted as represented, or to be returned. Send for Catalogue and Price-List.

WATT & CALL,

dec-1y **SOLE MANUFACTURERS, 1452 Franklin Street, Richmond, Va.**

HUBBALL & DUNNETT,

HYDRAULIC ENGINEERS,

6 & 8 N. Liberty St., and 171 N. Eutaw St., Baltimore.

Public and Private Buildings Heated by Steam or Hot Water; Plumbing of every description, with Lead, Galvanized or Plain Iron Pipe; hot and cold water; Hydraulic Machines, various patterns, simple in construction and durable, viz: Steam Pumps, positive action; Hot Water Pumps, Acid Pumps, Double Action Pumps, Brass and Iron; Water-Wheel Pumps, Water Rams, Wind Mill Pumps, Horse-Power Pumps, Steamboat Pumps for extinguishing fire; Springfield Gas Machines for lighting Country Houses, Hotels, Factories and Railroad Stations, &c., &c.

Having experienced workmen in our employ, any work entrusted to our care will be promptly and satisfactorily done.

We have the privilege to refer to the following gentlemen as to our capability to do the above work: Hon. Reverdy Johnson, Hon. Henry G Davis, Hon. Wm. Pinkney Whyte, Francis T. King, Esq., J. H. B. Latrobe, Esq., Samuel G. Wyman, Esq., William G. Harrison, Esq., William W. Taylor, Esq., John Gregg, Esq., Wm. F. Burns, Esq., J. W. Allnutt, Esq., Messrs. Baldwin & Price, Architects. dec-1y

JOHN C. DURBOROW,

GENERAL AGENT FOR

THE KIRBY MOWERS AND REAPERS,

55 Light street, BALTIMORE, *MARYLAND.*

55 Light street, BALTIMORE, *MARYLAND.*

☞ The KIRBY COMBINED REAPER AND MOWER with BALTIMORE SELF-RAKE received FIRST PREMIUM at Carroll County, Frederick County and Montgomery County, Md., FAIRS, October, 1873. The BURDICK INDEPENDENT REAPER with BALTIMORE SELF-RAKE received FIRST PREMIUM and DIPLOMA at Maryland State Fair, 1873. The KIRBY TWO-WHEEL MOWER was awarded the FIRST PREMIUM at Carroll County, Frederick County and Montgomery County, Md., Fairs; and also, at Leesburg, Va., Fair, 1873.

SIMPLE, STRONG AND DURABLE.

POSITIVELY NO SIDE DRAUGHT, NO WEIGHT ON THE HORSE'S NECK. Extras and repairs constantly on hand. Send for Circular and Price-List. Also, DEALER IN ALL KINDS OF

Agricultural Implements, Cucumber Pumps, Seeds, Fertilizers, &c.

JOHN C. DURBOROW,

dec-1y **55 Light Street, near Pratt, Baltimore, Md.**

W. A. MYERS, New Oxford, Pa.,
can spare a few pairs or trios of fine large
PARTRIDGE COCHINS,
WHITE LEGHORNS,
AND
WHITE HOLLAND TURKEYS
at fair prices. 1t

MARBLEIZED SLATE MANTELS.

SUPERIOR IN FINISH

AND DURABILITY

To MARBLE and at much less Price.
JOHN DUER & SONS,
Dealers in HARDWARE,
24 S. CHARLES STREET.
Send for Catalogue. no-1y

M. PERINE & SONS,
Manufacturers of
Flower Pots, Stone and Earthenware,
POTTERIES AND SALES-ROOM,
711 and 713 West Baltimore Street,
mar-1y BALTIMORE, MD.

PURE BRED
Calves, Sheep, Premium Berkshire and Chester White Pigs Bred and For Sale by
FRANCIS MORRIS.
Office, 18 N. 13th St., Philadelphia, Penna.

THE
Farmer's Fruit and Vegetable Drier,
patented by A. W. SWEENY, Lake Roland, Md. Simple in construction, cheap and efficient. State, county and farm rights for sale. Circulars free. Agents wanted.

WILLIAM HARRIS,
GUNS & PISTOLS,
Just received, a large assortment of BREECH and MUZZLE-LOADING GUNS, SPORTSMEN'S GOODS, &c.
No. 116 PRATT STREET,
(One door from South st.) **BALTIMORE, MD.**
[sep-0t]

STEAM MARBLE WORKS.
BEVAN & SONS,
No. 70 HOWARD ST., NEAR SARATOGA.
Would call attention to their fine collection of MONUMENTS, TABLETS, &c.; GRAVESTONES FOR CEMETERIES; also a varied assortment of MARBLE MANTLES, and are prepared to execute all kinds of Marble Work for building. mar-1y

GROVER & BAKER'S
"NEW" No. 9 Lock Stitch and Elastic Stitch
SEWING MACHINES,
THE VERY LATEST AND BEST.
SALESROOMS,
No. 17 North Charles Street, Baltimore.

THE CHEMICAL COMPANY OF CANTON,

WM. DAVISON, Pres't. B. N. BAKER, Sec'y.

MANUFACTURERS OF

Oil Vitriol

AND OTHER CHEMICALS.

Office, 104 Lombard St., up stairs. Works on Clinton St., Canton.

BALTIMORE, MD.

ALL ORDERS PROMPTLY ATTENDED TO

JOHN J. HAND,

MANUFACTURER OF

Carriages, Buggies and Jagger Wagons,

OF ALL STYLES,

151 North High Street,

Between Gay and Hillen Streets,

BALTIMORE, MD.

☞ New and Second-hand Carriages constantly on hand. All orders promptly executed at Reasonable Rates. Repairs done on Shortest Notice. J. J. HAND.

HUGH SISSON,

STEAM MARBLE WORKS,

Cor. North and Monument Streets,

Importer and Dealer in Foreign and Domestic

MARBLE & STATUARY.

The Trade supplied with MARBLE IN BLOCKS, or cut to size, at Lowest Rates.

REPOSITORY AND SALES ROOMS,

No. 140 W. BALTIMORE STREET,

Between Calvert and North (Rinehart Buildings), where may be seen a Choice Collection of

STATUARY, MANTELS,
FURNITURE SLABS,
COUNTERS, TILE,
MONUMENTS, TOMBS,
GRAVESTONES,
CURB and POSTS
for Cemetery Lots, &c.

my-6t

TREES AND PLANTS.

Rosebank Nurseries.

We invite the attention of Planters and Amateur Cultivators to our complete stock of the following:

APPLES, Standard and Dwarf. CHERRIES, Standard and Dwarf.
PEACHES, PLUMS and GRAPE VINES, together with other SMALL FRUITS of popular kinds. ORNAMENTAL TREES, EVERGREENS and SHRUBS, with ROSES in great variety. A large stock of choice GERANIUMS, VERBENAS, and other bedding-out plants.

75 to 100,000 two and three-year old OSAGE ORANGE HEDGE PLANTS.

☞ **ORDERS BY MAIL PROMPTLY ATTENDED TO.** *Catalogues forwarded on Application.* ☜

W. D. BRACKENRIDGE.

LINTON & CO.

Manufacturers of

MACHINE-MADE POTS.

Pots for Propagating Cotton Plants for Early Planting, Pots for forcing Jute, also Turpentine Pots.

These Pots are made with the most approved machinery from tempered clay. The quantities made by us per day are from 3,000 to 6,000.

We have always on hand a large assortment of FLOWER POTS. Having improved facilities for the manufacture of FLOWER POTS, and giving the same our entire attention, we are enabled to supply the market with an article which, for neatness, durability and cheapness we defy competition.

These Pots can be safely shipped to any part of the United States in lots to suit; also, URNS, BIRD BOXES and HANGING BASKETS.

LINTON & CO.

apr-1yr *Corner Lexington and Pine Sts., Baltimore, Md.*

HARRINGTON & MILLS,

Nos. 204 & 206 BALTIMORE STREET, BALTIMORE, MD.

Manufacturers and Importers of

Fine Furniture, Looking Glasses, Gilt Frames, Curtains and Draperies.

We call particular notice to our large stock of **CANE FURNITURE,** embracing Chairs, Tables, Lounges, &c., &c.; being particularly suitable for country residences, and adapted from its lightness and coolness, for Southern latitudes.

A large stock of Fine Furniture constantly on hand and made to order. may—1y.

MARYLAND BRITANNIA AND GOLD AND SILVER PLATE WORKS.

ESTABLISHED 1850.

WM. HOLMES,

SALES ROOM.....No. 3 NORTH CHARLES STREET.

Office and Factory, Nos. 50 and 52 Holliday Street,

BALTIMORE, MD.

☞ **Repairing and Replating done so as to look equal to new ware.** may—1y.

CANFIELD, BRO. & CO.

Watches, Diamonds and Rich Jewelry,

Corner Baltimore and Charles Streets, Baltimore, Md.

SILVER AND PLATED WARE,

American, English & Swiss Watches, Clocks & Bronzes

Fans, Opera Glasses and Fancy Goods.

THE LARGEST HOUSE IN THE CITY.
PREMIUMS FOR AGRICULTURAL FAIRS FURNISHED.
BADGES AND MEDALS FOR COLLEGES AND SCHOOLS A SPECIALTY.
WATCHES CAREFULLY REPAIRED. jy-12m

V. O. EARECKSON,

LUMBER DEALER,

West Falls Avenue, first Yard South of Pratt St. Bridge.

Building Lumber, Shingles, Laths, Palings,

FENCING, &c.

LIME, BRICKS, SASH, DOORS AND MILL WORK

may-1y AT THE LOWEST PRICES.

Maryland Poudrette,

☞ RICH IN PHOSPHATES, AMMONIA AND OTHER ALKALINE SALTS, as per analysis, containing in one ton of 2,000 pounds, say

34 pounds Ammonia,
39 pounds Potash,
38 pounds Phosphoric Acid,

Also, LIME, MAGNESIA, and other valuable constituents in smaller quantities. For sale, packed in barrels or bags, at $15 per ton, 2,000 pounds, by

HEALTH DEPARTMENT,

sep-6m **28 Holliday street, Baltimore.**

JOHN W. WILSON & SON,

Lumber Dealers,

AND MANUFACTURERS OF

Frames, Sash, Doors, Blinds, Mouldings, Brackets, Newels, Balusters,

And Building Materials Generally.

Office, Wareroom and Lumber Yard, Fremont St., near S. Eutaw,

Factory, cor. S. Eutaw and Cross Sts.

BALTIMORE, MD.

BUY DIRECT OF THE MANUFACTURERS AND SAVE 25 PER CENT. sep-1y

PENNSYLVANIA
Agricultural Works,
YORK, Pa.

A. B. FARQUHAR,
MANAGER AND PROPRIETOR.

The Pennsylvania Agricultural Works is one of the most extensive establishments of its kind in the United States. It is furnished with improved Machinery, Foundry, Forging Rooms, Planing and Sawing Mills, Lumber Yard, &c., complete within itself. It is situated among the great Iron, Coal and Lumber fields, which form the basis of all manufacturing; and I would respectfully call the attention of the public to these advantages, confident of meriting an extended patronage.

The following are among the specialties:

AGRICULTURAL STEELS, PLOWS, CULTIVATORS, HORSE RAKES, PLOW HANDLES,

Threshing Machines, Horse Powers, &c.

HORSE POWERS.

The Horse-Power is one of the most important implements, and probably the most difficult to keep in order; too much care, therefore, cannot be used in selecting the very best.

I have long made the manufacture of Horse-Powers a specialty, and can safely recommend my improved Iron-Geared Powers to be all that I claim for them.

FARQUHAR'S CLIMAX HORSE-POWER,

For Threshing, Ginning and General Farm Use,

ranks first; being the result of many years' labor, "practice with science," and the expenditure of thousands of dollars in experimenting.

It is remarkable for its light draft, simplicity, great strength and durability. It is fitted up with as much care as a piece of cotton machinery or steam engine, and will last as long. The rule, the "best is the cheapest," applies with special force to Horse Powers.

THE PELTON OR TRIPLE-GEARED IRON POWER.

This well-known power is noted for its strength, cheapness and general efficiency. Like the Climax, the gearing is all secured in an iron frame, and is uninjured by the weather. The pinions are made of chilled iron, and no pains are spared to make it a first-class, cheap power.

Improved Railway Horse-Powers, Threshers and Separators,

Have been a specialty with me for many years, and those who favor me with their orders may rely upon getting a machine which will run as light, waste less grain, and give more general satisfaction than any offered.

PLOW HANDLES.

Having improved Blanchard machinery for the manufacture of Plow Handles upon an extensive scale, I can supply first quality Handles, side bent to order for any pattern of plow.

☞ For further particulars, address

jy–1y **A. B. FARQUHAR, York, Pa.**

DRY PERUVIAN GUANO.

500 Tons Dry Peruvian Guano, part of the cargoes of ships South America and Heroine, imported in 1870.

☞ THIS IS THE ONLY DRY GUANAPE GUANO IN THE CITY.

For sale from Peruvian Agents' Warehouse.

J. J. TURNER & CO.

No. 42 Pratt Street, BALTIMORE.

BONE FLOUR AND BONE DUST.

ANALYSIS.

AMMONIA	4.37
BONE PHOSPHATE OF LIME	44.56

GROUND BY OURSELVES & WARRANTED PURE.

Superior to any offered in this market. Packed in good, strong Bags.

PRICE $43 PER TON.

J. J. TURNER & CO.

No. 42 Pratt Street, BALTIMORE.

JOHN D. HAMMOND. HENRY A. ANTHONY.

JOHN D. HAMMOND & CO.

Saddle, Harness, Trunk and Collar Manufacturers,

WHOLESALE AND RETAIL.

No. 361 W. Baltimore Street, opposite "Eutaw House,"

sep—1y BALTIMORE.

LIME, HAIR, BRICKS, CEMENT AND PLASTERS.

WARREN'S

Lime, Cement and Plaster Depot.

CONSTANTLY ON HAND

Building Lime in Barrels, or Packed in Hogheads for Shipment, or Delivered in Bulk to Buildings, Wholesale and Retail.

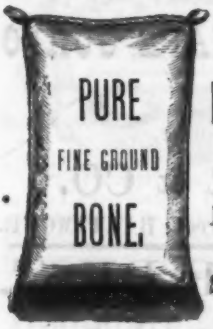
☞Rosendale Cement, Calcined and Land Plasters at Lowest Prices.☜

No. 18 EAST FALLS AVENUE,

Bricks at Brick-Yard Prices. **Baltimore, Md.**

DEALERS IN

R. J. BAKER & CO.



MANUFACTURERS AND IMPORTERS OF

PureGroundBone

AND

CHEMICALS

FOR

FERTILIZERS.

36 & 38

South Charles St.

BALTIMORE, MD.

DYE-WOODS

DYE-STUFFS,

OIL VITRIOL,

Glue, Indigo, Madder, Bi-Carbonate of Soda, &c.

Nos. 36 and 38 South Charles Street,

jan–1y **BALTIMORE, MD.**

WILSON & CO.,

63 SECOND STREET, BALTIMORE,

MANUFACTURERS OF

FIRE AND WATER PROOF

IMPROVED PLASTIC SLATE ROOFING

AND DEALERS IN

ENGLISH ROOFING FELT.

The PLASTIC SLATE IMPROVED, as a roofing material, stands unrivalled. As a mastic it adapts itself to every SHAPE and SLOPE, NON–COMBUSTIBLE, IMPERVIOUS, NON–EXPANSIVE and UNDECAYING. FROST does not CRACK nor HEAT DISSOLVE it, possessing all the advantages of a sheet slate roof without its joints and crevices. Perfectly FIRE PROOF, and insures at same rates as slate or metal roofs. It is unequalled as a coating for RAILROAD and FARM BUILDINGS.

LEAKY SHINGLE ROOFS.

It frequently happens that house-owners wish to avoid the expense of taking off shingles and running the risk of uncovering the house. To accomplish this we recommend the use of the **ENGLISH ROOFING FELT,** which by far supercedes the common tarred paper. It has been proved by experience that roofs covered in this manner will stand for YEARS in places where other roofing materials have FAILED.

OLD METAL ROOFS can be covered with this material, making them to last many years, and more durable than several successive coats of paint, at half cost of a new roof.

FOR DAMP WALLS, as a remedy, it is unequalled and an entire success.

Orders for shipping promptly attended to.

WILSON & CO.,

No. 3 Rialto Building,

63 SECOND STREET, BALTIMORE.

jan–1y

WM. STUART SYMINGTON. THOS. A. SYMINGTON.

PATAPSCO CHEMICAL WORKS.

SYMINGTON BROS. & CO.

MANUFACTURERS OF

OIL VITRIOL

AND OTHER CHEMICALS.

Works on Locust Point, } Baltimore.
Office, 44 South Street, }

nov-1y

"THE CARROLLTON."

This new and beautiful Hotel, located upon the site of "Old Fountain Hotel," extended by an elegant front on Baltimore street, is convenient alike to the business man and the tourist.

It is the only Hotel in Baltimore of the new style, embracing

ELEVATORS, SUITS OF ROOMS, with BATHS,

And all conveniences; perfect ventilation and light throughout, and was planned and built as a Hotel, new from its foundation.

Its elegant and convenient Office and Exchange Room, with Telegraph, &c., will at all times be at the disposal of the merchants and citizens of the city.

The location of the Ladies' Entrance on Baltimore street, and the beautiful Drawing Rooms connected therewith, will give to families more than the usual degree of quietude and seclusion.

The undersigned refers to his career of over thirty years as a Hotel Manager in New York and Baltimore, and feels confident, that with a new and modern house, he can give entire satisfaction to his guests.

To accommodate Merchants and others who visit Baltimore, the proprietor will charge $3 per day for the rooms on fourth and fifth floors, making the difference on account of the elevation. Ordinary transient rates for lower floors, $4 per day.

R. B. COLEMAN, Proprietor.

BALTIMORE, MD. [nov-1y]

MORO PHILLIPS'

GENUINE IMPROVED

SUPER-PHOSPHATE OF LIME.

STANDARD GUARANTEED.

Reduced in price, and improved in quality by the addition of Potash. This article is already too well known to require any comments upon its Agricultural value. Thirteen years' experience has fully demonstrated to the agricultural community its lasting qualities on all crops, and the introduction of Potash gives it additional value.
PRICE $50 PER TON, 2,000 LBS. Discount to Dealers.

PURE PHUINE.

SUPERIOR TO PERUVIAN GUANO. Patented April 29, 1860. Manufactured by MORO PHILLIPS.
PRICE $50 PER TON, 2,000 LBS. Discount to Dealers. For sale at Manufacturer's Depots:
110 S. DELAWARE AV., Philadelphia, Pa.
95 SOUTH STREET, Baltimore, Md.
And by Dealers in general throughout the country. Pamphlets mailed free on application.
ap-1y **MORO PHILLIPS**, Sole Proprietor and Manufacturer.

MONUMENT IRON WORKS.

DENMEAD & SON,

Cor. North and Monument Streets, Baltimore, Md.

MANUFACTURERS OF STATIONARY AND PORTABLE

Steam Engines and Boilers

OF ALL SIZES.

DAVID'S PATENT PULVERIZING MILLS, for Guanos, Bones, Ores, Clays; also, Flour Making.
☞ SEND FOR CIRCULAR. ap-1y

BALTIMORE

RETORT AND FIRE BRICK WORKS.

GEORGE C. HICKS & CO.

MANUFACTURERS OF

CLAY RETORTS, TILES, FIRE BRICK,

VITRIFIED STEAM-PRESSED

Drain and Sewer Pipe, Stove Lining, &c.

ap-1y *Manufactory, Locust Point, Balt. Office, 4 S. Holliday St.*

Established] **A. E. WARNER,** [1811.

Manufacturer of

Silver Ware & Rich Jewelry,

English, Swiss and American WATCHES of the Best Makers;
Importer and Dealer in Diamonds, Fine Watches, Silver-Plated Ware, Table Cutlery, &c.

WEDDING PRESENTS,

Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses and Shell Jewelry, &c.

je-1y No. 135 W. Baltimore Street, near Calvert, Baltimore.

GARDEN SEEDS,

Guano, Bone, Plaster and Fertilizers,

CLOVER, TIMOTHY, ORCHARD,
KENTUCKY BLUE,
And other Field Grass Seeds.

Lawn and Ornamental Grass Seeds.

BUCKEYE SELF-DISCHARGING HORSE RAKE.

AGRICULTURAL
AND
Garden Implements
OF EVERY DESCRIPTION.

We invite the attention of Farmers, Gardeners and others to our complete stock of Implements, Seeds, &c., in which will be found all articles pertaining to our business. We make specialty of each department of our business in their respective seasons, and guarantee everything as represented. We have just secured a new supply of GARDEN SEEDS of the latest and best varieties, all of which are fresh and true to name.

We are agents for the celebrated "GUANAHANI" GUANO, which is being introduced in this market. It is esteemed by many as equal to Peruvian Guano, and sells at $40.00 per ton.

In our stock of implements we include an assortment of the very best in the market—among which are the "MEADOW LARK" MOWER, warranted equal in efficiency of working to any other machine in the market, and sells at $95.00; with self-rake attachment, as a combined reaper and mower, $175.00.

Buckeye Self-discharging Wheel Horse Rake,
Hand-delivering Wheel Rakes,
Bullard's Hay Tedder,
Hagerstown Grain, Seed & Fertilizer Drill,
Empire Thresher and Cleaner,
Champion Rye Thresher,
Thornburg & McGinnis' Lime Spreader,
Pelton and Railway Horse Powers,
Pioneer Stump Puller,
Steel Plows, &c.

JOHN M. GRIFFITH & CO.

41 & 43 N. Paca Street,

mar BALTIMORE, MD.

PENNSYLVANIA ROUTE,

FORMED BY THE

NORTHERN CENTRAL
AND
PENNSYLVANIA RAILROADS
ON THE
West, Northwest and Southwest,
To PITTSBURG, CINCINNATI,
LOUISVILLE, INDIANAPOLIS,
CHICAGO, ST. LOUIS,
AND ALL OTHER
PROMINENT POINTS.

BALTIMORE & POTOMAC
AND
Alexandria & Fredericksburg Railways
ON THE SOUTH TO
Washington, Richmond,
AND ALL POINTS IN THE
Atlantic and Gulf States.
THE ONLY
ALL RAIL LINE
WITH NO
OMNIBUS TRANSFER AT WASHINGTON.

NORTHERN CENTRAL
AND
PHILADELPHIA and ERIE RAILWAYS
ON THE NORTH TO
HARRISBURG, WILLIAMSPORT, ELMIRA,
WATKINS GLEN, ROCHESTER, ERIE,
BUFFALO, NIAGARA FALLS.

☞ Baggage called for and checked at Hotels and private residences through to destination. Sleeping and Parlor Car accommodations secured.

Through tickets sold and information given at company's office,

N. E. Corner Baltimore and Calvert Streets,
At Depot N. C. Railway,
UNION DEPOT, CHARLES STREET STATION,
And PENNSYLVANIA AVENUE STATION.

ED. S. YOUNG,
Gen'l Passenger Ag't.
B. & P. and N. C. R. R'ds.

D. M. BOYD, Jr.,
Gen'l Passenger Ag't,
Pennsylvania R. R.

SAMUEL T. DEFORD, JR.,
Southeastern Agent

feb

ESTABLISHED 1839.

TO FARMERS, PLANTERS and GARDENERS

Pure Ground Bone

MANUFACTURED BY

JOHN BULLOCK & SON,

Factory: Washington Road, Baltimore, Md.

Store: No. 61 S. Gay Street, Baltimore, Md.

P. O. Box 636.

PACKED IN BARRELS OR BAGS, $45 PER TON.

For the past thirty years we have been engaged in the manufacture of PURE GROUND BONE, our crude stock being gathered daily from the Butchers here, with whom we have yearly contracts. Having recently added additional and improved machinery, we are now prepared to fill all orders in our line with promptness and despatch. Would respectfully call attention to the annexed certificate:

BALTIMORE, March 1st, 1873

Messrs. JOHN BULLOCK & SON, Baltimore, Md.

Gents—The following is the result of an analysis of your Ground Bone:

	PER CENT.
Moisture determined at 212° Fahrenheit,	5.44
Organic Matter,	39.16
Containing Nitrogen, 4.47 per cent., equal to Ammonia, 5.42 per cent.	
Inorganic Matter,	55.40
Containing Phosphoric Acid, 22.15 per cent., equal to Bone Phos. of Lime, 48.35 per cent.	
Alumina, Oxide of Iron, and Carbonate and Fluoride of Lime not determined.	
Insoluble Residue, 3.61 per cent.	
	100.00

I am pleased to state that this is one of the richest and most available forms of Phosphate of Lime and Ammonia that can be found for agricultural purposes. The per centage of valuable ingredients named is in excess of the generality of fertilizers now being offered for sale. Respectfully, &c.,

P. B. WILSON,
Analytical and Consulting Chemist.

oct–1y

BONE DUST & BONE MEAL.

"The Standard in America."

Ammonia..... 5 Bone Phosphate of Lime..... 54

$45 Per Ton, in Bags.

MARYLAND SUPER - PHOSPHATE

And Tobacco Sustain.

750 lbs. Peruvian Guano. 1,100 lbs. Bone Dust. 150 lbs. Potash.

$50 Per Ton, in Bags.

DISSOLVED OR VITRIOLIZED BONE,

$48 Per Ton.

No. 1 PERUVIAN GUANO, OIL VITRIOL (warranted full strength), MURIATE POTASH, SULPHATE OF SODA, NITRATE OF SODA, SULPHATE OF AMMONIA,
And other Chemicals for making Super-Phosphates and Fertilizers, at Wholesale Prices.

JOSHUA HORNER, Jr.

54 S. Gay St., Cor. Chew and Stirling Sts., and 178 Forrest St.

☞TO WHEAT GROWERS.

"EXCELSIOR,"

1874

1874

The most concentrated, universal and durable fertilizer ever offered to the farmer—combining all the stimulating qualities of Peruvian Guano, and the ever durable fertilizing properties of Bones. In fine dry powder, prepared expressly for drilling, and can be applied in any quantity, however small, per acre. It is the opinion of many close calculating Farmers, after SIXTEEN YEARS' experience in testing it side by side with other popular fertilizers, that an application of 100 pounds of Excelsior is equal to from 200 to 300 pounds of any other fertilizer or guano, and therefore fully 100 per cent. cheaper. UNIFORMITY OF QUALITY GUARANTEED BY THE MANUFACTURERS.

☞ *Farmers should see that every Bag is branded as above, with the ANALYSIS and OUR NAME in RED LETTERS. All others are counterfeits.*

PRICE $55 PER TON.

sep-tf **J. J. TURNER & CO., 42 Pratt St., Baltimore, Md.**

WHEAT SEEDING.

1874 1874

ANALYSIS.

Ammonia	3.30
Soluble Phosphate of Lime	23.91
Bone Phosphate of Lime	3.15

Composed of the most concentrated materials, it is richer in Ammonia and Soluble Phosphates than any other Fertilizer sold, except our "Excelsior," its only competitor, and is made with the same care and supervision; uniform quality guaranteed; in excellent order for drilling. Packed in bags.

PRICE $45 PER TON.

J. J. TURNER & CO.

sep-] **No. 42 Pratt Street, BALTIMORE.**

Z. JEANNERET,

Wholesale and Retail Dealer in

HUMAN HAIR GOODS!

62 LEXINGTON ST., bet. Charles and Liberty,

BALTIMORE.

A large and varied stock of HUMAN HAIR GOODS always on hand, such as Braids, Curls, Wigs, &c., &c. Also, Combs, Brushes, *FACE and COMPLEXION POWDERS*, French Perfumery and Pomades, &c.

☞ Particular Attention to Country Orders. Reasonable Discount to Dealers.

OLD HAIR BOUGHT or EXCHANGED,

aug-1y **At the Lowest Cash Prices.**

Ryder's American Fruit-Drier.

This Machine combines cheapne s in first cost, dura ility, simplicity, and practical utility in the most perfect manner. It is made in sizes especially adapted for

Farmers and Family Use.

It has been greatly improved since last season, and, it is claimed, will in a single year

SAVE ITS COST IN CANS AND SUGAR,

And that fruits prepared in it are superior in **Flavor, Color and General Appearance.** It will dry and preserve equally well all kinds of Fruit. Vegetables, and animal substances. By its use, also, inferior fruits can be partially saved and turned to account.

The DRIER is now made in different siz s, with beater and all complete, varying in price from $50 to $200, and having a drying capacity of from 5 to 50 bushels per day.

☞ For further information, and for Illustrated Circular and Price-List, address

SAML. SANDS & SON, Publishe s American Farmer,

jy-tf **9 NORTH STREET, BALTIMORE.**

WATERS' NEW SCALE PIANOS,

SQUARE AND UPRIGHT, *are the* **best made.** *The* **touch elastic,** *the* **tone powerful, pure** *and* **even** *through the* **entire scale,** *yet* **mellow** *and* **sweet.**

WATERS' CONCERTO ORGANS

cannot be **excelled** *in* **tone** *or* **beauty:** *they* **defy competition.** *The* **Concerto Stop** *is a* **fine Imitation** *of the* **Human Voice.**

Warranted *for* **6 YEARS. PRICES EXTREMELY LOW** *for* **cash** *or* **part cash,** *and* **balance** *in* **monthly payments. AGENTS WANTED. A liberal discount** *to Teachers, Ministers, Churches, Schools, Lodges, etc.* **Illustrated Catalogues mailed.**

HORACE WATERS & SON,
481 Broadway, New York. P. O. Box 3567.

OFFICE OF THE PEOPLE'S GAS COMPANY, No. 162 W. Fayette Street.

GAS LIME,

For agricultural purposes, for sale at the Works of the Company, foot of Scott Street, at Two Cents per Bushel. no-3m

---

MANUFACTURERS OF PURE

No. 1 GROUND PLASTER

C. S. & E. B. FREY,

No. 18 HARFORD AVENUE, BALTIMORE, MD.

And dealers in Corn Husks. Always buying and pay the HIGHEST CASH PRICE

FOR CORN HUSKS. feb 19i

SMITH & CURLETT,

Steam Soap & Candle Works,

PERFUMED CHEMICAL OLIVE SOAPS,

ADAMANTINE and TALLOW CANDLES,

• Cor. Holliday and Pleasant Sts.

feb-1y BALTIMORE, MD.

OPIUM MORPHINE HABIT speedily cured by Dr. Beck's only known and sure Remedy.

NO CHARGE

for treatment until cured. Call on or address

DR. J. C. BECK,
112 John Street, CINCINNATI, OHIO.

The Fruit Recorder & ottage Gardener

3 MONTHS FREE.

will be sent FREE for 3 months to all who will pay postage at office of delivery. We do not ask any one to subscribe for our paper until they know what they are to get. *It speaks for itself.* Price only $1 per year. Our SMALL FRUIT INSTRUCTOR is a work of 64 pp. that tells in simple language just how to grow fruits in abundance for home use or market. Price 25 cts. postpaid.

oct-3t **A. M. PURDY, Rochester, N. Y.**

FOR SALE

From 15 to 20 SUPERIOR JERSEY HEIFERS and Cows—all entered in Herd Register.

EDWARD F. JENKINS,
oct-3t Baldwin, Balto. Co., Md.

JAS. LEFFEL'S

IMPROVED DOUBLE

Turbine Water Wheel.

POOLE & HUNT, Baltimore,

MANUFACTURERS FOR THE SOUTH AND SOUTHWEST.

Nearly 7,000 now in use, working under heads varying from 2 to 240 feet! 24 sizes, from 5¼ to 96 inches.

The most powerful Wheel in the market, And most economical in use of water.

Large ILLUSTRATED pamphlet sent post free.

MANUFACTURERS, ALSO, OF

Portable and Stationary Steam Engines and Boilers, Babcock & Wilcox Patent Tubulous Boiler, Ebaugh's Crusher for Minerals, Saw and Grist Mills, Flouring Mill Machinery, Machinery for White Lead Works and Oil Mills, Shafting, Pulleys and Hangers.

SEND FOR CIRCULARS. O-1y

THE EMERALD COOK,

The largest and best Cooking Stove in the market. Also manufacture and sell the VIRGINIA, VIRGIN QUEEN, WELCOME, SEA BIRD, and ADVANCE Cook Stoves, and a beautiful SIX-HOLE RANGE, with Warming Closet—No. 1 Baker; and a large variety of HEATING STOVES. Manufacturer and proprietor of the BEST FIRE-PLACE STOVES in the world—the "FAME," "REGULATOR" and "CHAMPION." Satisfaction guaranteed.

JAS. ARMSTRONG,
60 Light St., Baltimore, Md.
FOUNDRY, Port Deposite, Md. oc1-6t

Taylor's Rotary Engine,

(*PATENTED MARCH* 25, 1873.)

This Engine is adapted to any place where power is needed. For hoisting purposes, vessels, boats, &c. Some of its advantages are: First—Simplicity. Second—The *small* space it occupies, one of twelve-horse power occupying only two feet square space. Third—It reverses INSTANTLY, turning either way at will of operator. Fourth—It has *no dead center.* Fifth—It requires *less* steam, consequently less boiler room for same amount of horse-power.

The Excelsior Portable and Agricultural Engine.

Heater inside boiler, (no freezing of pipes,) cylinder incased with steam, consequently using *dry steam* instead of wet steam. Has *more good points* than any *Portable or Agricultural Engine in the market.* STATIONARY ENGINES *of most approved styles. Return Tubular Boilers,* all sizes.

VERTICAL ENGINES AND BOILERS,

3, 5 and 7 Horse Power—simple, durable and cheap.

CIRCULAR SAW MILLS,

SINGLE AND DOUBLE.

Adapted to *any mill site.* Built out of the *best material. Strong, durable and easily operated.* SOLD ON EASY TERMS.

DIAMOND STATE SEPARATORS.

We claim *simplicity, durability and capacity to do good work* in all kinds of grain, and with *any kind of power,* from two or three-horse tread, six or eight-horse sweep power, or a four or six-horse engine. First—Its separating the straw from the grain *is perfect.* It has no rakes or beaters. Second—Its riddles, which are *entirely different* from any machine in the market, make its cleaning of grain entirely free from straw, &c., and fit for market. Third—It has a feeder's duster which protects the feeder from the dust. Fourth—It is the simplest machine built; has only two belts, is easily handled and *runs lighter* than any machine doing the same amount of work.

Westminster Triple-Geared Power:

Simple and compact, runs light, has a quick motion, mounted on wheels or down.

IMPROVED HARMAN HORSE-RAKE.

Is easily operated by a boy; does not dig and scratch the soil, and in grass or grain has no superior. Runs light and is built in the best manner. We solicit a trial.

Lime and Fertilizer Spreader

Will spread LIME, PLASTER, ASHES, FERTILIZERS AND FINE MANURES, and drill in rows if desired. Will spread from 5 to 100 bus. Lime per acre, as desired. It is built in the best manner, and will spread as much in a day with a boy and a pair of horses as fifteen men by hand; while it has no equal in the evenness of its spreading. Every machine warranted. We have the most flattering testimonials of its utility.

HOMINY MILLS,
SELF-SHARPENING GRIST MILLS,
CORN CRUSHERS,
WOOD AND TABLE SAWS,
FORCE PUMPS,
PLOWS OF ALL SIZES,
MILL MACHINERY, &c., &c.

SEND FOR CIRCULARS. AGENTS WANTED.

Address **Taylor Manufacturing Co.**
Westminster, Md.

jan-1y

Keystone Portable Forges.

FAN BLAST, LARGE OR SMALL. FOR HAND OR POWER.

EVERY FARMER SHOULD HAVE ONE, and save money and time by doing HIS OWN REPAIRING, &c.

Send for Descriptive Catalogue and Price-List to

REUTER & MALLORY,

ap-1y 14 S. Charles Street, Baltimore.

PAINT! PAINT! PAINT!

THE

AVERILL CHEMICAL PAINT!

Which for DURABILITY, BEAUTY and ECONOMY, is unsurpassed by any other PAINT MANUFACTURED, and is already mixed for use, of all the different shades of color to suit the taste, and is equally good for wood, stone or iron, and will not crack nor chalk off by friction, and will preserve its color twice as long as the best Lead Paint. It is sold only by the gallon, and one gallon will cover twenty square yards of smooth surface two coats.

☞ Send for Circulars and sample cards.

R. & W. H. CATHCART, Sole Agents,

jan-1y 113 Thames street, Baltimore.

GEORGE PAGE & CO.,

Machinists and Founders.

Portable and Stationary Steam Engines and Boilers, Patent Portable CIRCULAR SAW MILLS, Portable Grist Mills, Horse Powers, Leffel's Turbine Water Wheel, &c.

No. 5 N. SCHROEDER STREET, near W. Baltimore street,

feb-1y BALTIMORE, MD.

WIRE RAILING

AND

ORNAMENTAL WIRE WORKS.

DUFUR & CO.

No. 36 North Howard Street, Baltimore, Md.

MANUFACTURE

Wire Railing for Cemeteries, Balconies, &c.

SIEVES, FENDERS, CAGES, SAND and COAL SCREENS, WOVEN WIRE, &c.

feb-1y Also, Iron Bedsteads, Chairs, Settees, &c., &c.

IMPORTANT IMPROVEMENT IN FERTILIZERS.

GERMAN POTASH SALTS,

Imported directly from the mines, high and low tests.

Orders of Manufacturers promptly executed in deliveries to suit.

STOCK ON HAND FOR SALE VERY CHEAP.

Muriate of Potash, Kainit, &c.

Also, for sale GROUND BONE, guaranteed strictly pure, testing 4.112 Ammonia, 47.010 Bone Phosphate of Lime, GUANO, &c. PLEASE CALL FOR CIRCULARS.

TATE, MÜLLER & CO.

oct-1y *52 S. Gay St., Baltimore, Md.*

BURNS & SLOAN,

No. 132 Light Street Wharf,

BALTIMORE, MD.

BUILDING LUMBER AND SHINGLES,

ASH, OAK AND WALNUT.

Lime, Bricks, Sash and Mill Work.

oct-12t

JESSE P. GORE,

[Successor to M. J. DOWLING,]

Carriage Manufacturer,

Nos. 153 & 155 N. High Street,

BALTIMORE.

All kinds of Fashionable Carriages built to order at the Shortest Notice.

☞ **Repairing in all the Branches executed promptly in Good Style and at Moderate Prices.** oct-1y

---

German Potash Salts,

Imported directly from the mines, high and low tests, in original packages, at lowest market rates, IN LOTS TO SUIT.

KAINIT AND MURIATE OF POTASH.

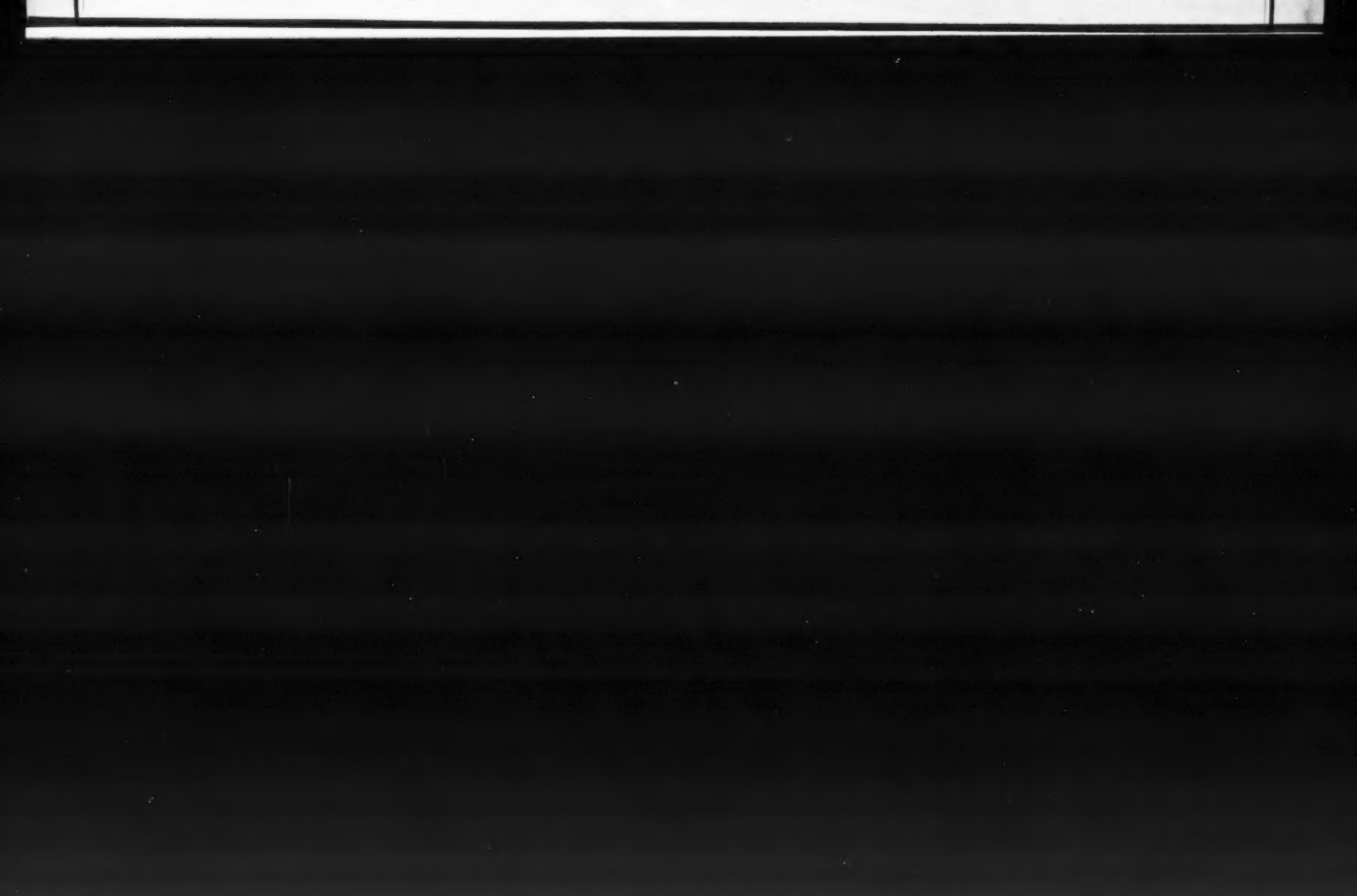
Also, for sale GROUND BONE, BONE MEAL, guaranteed strictly pure, GUANO, &c.

F. C. GRANGE & CO.

Successors to WM. GRANGE, original introducer and importer.

Office, 103 W. LOMBARD ST., bet. Calvert and Light, BALTIMORE, MD.

SEND FOR DESCRIPTIVE CIRCULAR. oct-1y



R. SINCLAIR & CO.,

MANUFACTURERS OF

Agricultural Implements

AND

MACHINERY.

Also, Growers and Importers of

☞ Garden and Field Seeds, &c.

DEALERS IN FRUIT TREES AND PLANTS.

We would call the special attention of our friends and customers to the following first-class Machinery and Implements, which we guarantee to be equal to any article of the kind made in this country, being all of our own manufacture. We name, in part, such Machinery and Implements as are required by the Farmer and Planter for the Spring and Harvest Season, viz:

SINCLAIR'S PATENT MASTICATORS, of which we make four sizes, viz: Hand, Hand and Power, and Steam and Water Powers. These machines are the best in use for the purpose of cutting up Corn Stalks and Sugar Cane.

SINCLAIR'S PATENT SCREW PROPELLORS, HAY, STRAW AND FODDER CUTTERS, of which we make six (6) sizes, viz: Two light sizes, for hand power; two medium sizes, which can be run by hand or power, and two sizes for horse power. All of the above-named Cutters are our own patents and manufacture, and as such we can recommend them. Our 6-inch Small Hand Cutter is considered to be the best cheap Cutter made in this country. Price, $16.00.

READING'S PATENT HORSE-POWER CORN SHELLER, with and without Cleaning Attachment. The Attachment is Sinclair & Co.'s Improvement.

VIRGINIA HAND AND POWER SHELLER, with and without Cleaner. The Cleaner to this Sheller is also Sinclair & Co.'s Improvement.

DOUBLE AND SINGLE IRON SPOUT DOUBLE-GEARED HAND SHELLERS, WOOD-SPOUT HAND SHELLERS, several kinds.

SINCLAIR & CO.'S SOUTHERN IRON-BRACE GRAIN CRADLES, with Four, Five and Six Fingers. Considered the best Cradle made in this country.

SCULLY'S CELEBRATED CIDER AND WINE MILL AND PRESS, two sizes. They speak for themselves; in fact, they have no equals

"ANDERSON'S" AGRICULTURAL STEAMER, for Cooking Food for Stock. The best in use.

PELTON PATTERN OF HORSE POWERS, several sizes.

"CARDWELL'S" PATENT THRASHER AND CLEANER, two sizes.

THRASHERS AND STRAW CARRIERS, several sizes.

BUCKEYE REAPERS AND MOWERS, all the different sizes and styles.

ADVANCE MOWERS, HORSE WHEEL-RAKES, HAY TEDDERS, HORSE HAY-FORKS, SULKY CULTIVATORS, PLOWS, HARROWS and CULTIVATORS, and all kinds of

FARMING AND HORTICULTURAL TOOLS.

Address, R. SINCLAIR & CO.

may-1y. *62 Light street, Baltimore.*

THOS. NORRIS & SON,

MANUFACTURERS AND DEALERS IN

Agricultural Implements,

Field and Garden Seeds, Fertilizers, &c.

Would call special attention to the following first-class Machines, &c.:

WESTLINGHOUSE THRESHERS AND CLEANERS.

AULTMAN & TAYLOR'S THRESHERS AND CLEANERS.

LEVER AND RAILWAY HORSE POWERS—most approved.

VAN WICKLE WHEAT FAN—Price $37.

AMERICAN CIDER MILL AND PRESS—the best—$40

OUR NEW ACME PLOUGH.

Bickford & Hoffman Grain Drills,

Plows, Harrows, Cultivators, Straw Cutters, Corn Shellers, and all kinds of Farming Tools. Fresh Field and Garden Seeds, Pure Ground Bone and other Fertilizers.

PETER SCHUTTLER'S FARM & FREIGHT WAGONS

We call particular attention to these wagons, which are of very superior make, and which we offer exceedingly low for cash.

CUCUMBER PUMPS,

WITH PORCELAIN-LINED IRON CYLINDERS.

We are prepared to furnish, wholesale and retail, the best and cheapest Cucumber Pumps in the country, to suit all purposes, from the small cistern to the deepest well.
Send for Circular and Price List.

FOR HARVEST, 1874.

W. A. WOOD'S WORLD-RENOWNED

SELF-RAKE REAPER,

WITH AND WITHOUT MOWING ATTACHMENT.

A. E. WOOD'S MOWING MACHINES,

Universally acknowledged as good as, if not superior to, any others in use. The above Machines have taken more FIRST PREMIUMS in this country and in Europe than any other Reaping and Mowing Machines extant. Send for Descriptive Circulars. For sale by

THOMAS NORRIS & SON, Agents,

141 Pratt street, Baltimore, Md.

may1-1y.